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14 March 2022

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SUBJECT: Expanded Site Inspection Report for Polyfluoroalkyl (PFAS) Substances at Three Sites, Seneca Army Depot Activity in Romulus, NY; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

Dear Mr. Morse, Ms. Sweet, and Mr. Sergott:

Please find attached the Final Expanded Site Inspection (ESI) Report for PFAS at SEAD-25, SEAD-26, and the Firehouse at Seneca Army Depot. This document describes the investigations completed to date, provides the data, and evaluates the results for each of the three sites. Responses to EPA and NYSDEC comments are included as Appendix L.

If you have any questions about the attached document, please call me at 917-790-8230.

Sincerely,

Digitally signed by GALLO.CHRISTOPHER.T.1604778820
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Christopher T. Gallo
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Seneca Army Depot Activity
Romulus, New York

USACE – New York District
US Army, Engineering & Support Center
Huntsville, AL

Final PFAS Expanded Site Investigation (ESI) Report

Former Fire House (Building 103)
SEAD 25 (Fire Training and Demonstration Pad)
SEAD 26 (Fire Training Pit and Area)
Seneca Army Depot Activity

Contract No. W912DY-09-D-0062
Task Order No. 0023
EPA SITE ID# NY0213820830
NY Site ID# 8-50-006

March 2022

FINAL

PFAS EXPANDED SITE INSPECTION (ESI) REPORT

FOR THE FORMER FIRE HOUSE (BUILDING 103)
FIRE TRAINING AND DEMONSTRATION PAD (SEAD 25) AND
FIRE TRAINING PIT AND AREA (SEAD 26)
SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Prepared for:

U.S. ARMY, CORPS OF ENGINEERS, ENGINEERING AND SUPPORT CENTER
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U.S. ARMY, CORPS OF ENGINEERS, NEW YORK DISTRICT
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Contract Number W912DY-09-D-0062
Task Order No. 0023
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

MARCH 2022

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Acronyms and Abbreviations

%	Percent
6:2 FTS	6:2 fluorotelemer sulfonate
8:2 FTS	8:2 fluorotelemer sulfonate
AFFF	Aqueous Film Forming Foam
AOC	Area of Concern
bgs	below ground surface
BRAC	Base Realignment and Closure
C6	Six Carbon Based…
C8	Eight Carbon Based…
CERCLA	Comprehensive Environmental Response, Compensation, and Recovery Act
DoD	Department of Defense
EPA	United States Environmental Protection Agency
ESI	Expanded Site Inspection
ft	foot/feet
FTA	Fire Training Area
GW	Groundwater
HA	Health Advisory
LRA	Local Redevelopment Authority
MCL	Maximum Contaminant Level
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MW	Monitoring Well
ng/L	nanograms per liter
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAL	Project Action Limit
PFAS	Per- and Polyfluoroalkyl Substances
PFBA	Perfluorobutanoic acid
PFBS	Perfluorobutanesulfonic Acid
PFCA	Perfluoroalkyl carboxylates or perfluoroalkyl carboxylic acids
PFHpA	Perfluoroheptanoic Acid
PFHxA	Perfluorohexanoic acid
PFHxS	Perfluorohexane Sulfonic Acid
PFNA	Perfluorononanoic Acid
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane sulfonic acid
PFSA	Perfluoroalkyl sulfonates or Perfluoroalkane sulfonic acids
PID	Planned Industrial Development and Warehousing Area

Acronyms and Abbreviations (Continued)

PPT	Parts per trillion
RI	Remedial Investigation
SCIDA	Seneca County Industrial Development Agency
SEDA	Seneca Army Depot Activity
SI	Site Inspection
SO	Soil sample
SPLP	Synthetic Precipitation Leaching Procedure
SW	Surface water sample
US	United States
USEPA	United States Environmental Protection Agency

SECTION 1.0 Introduction

This Expanded Site Inspection (ESI) was performed to investigate per- and polyfluoroalkyl substances (PFAS) in soil, groundwater and surface water at the former Seneca Army Depot Activity (SEDA or Depot) located near Romulus, New York in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. The United States Environmental Protection Agency (EPA) and New York State Department of Environmental Conservation (NYSDEC) are the regulatory authorities for the ESI activities at SEDA. The ESI was performed to meet the latest NYSDEC Part 375 Remedial Programs, Sampling, Analysis and Assessment of PFAS Guidance (NYSDEC, 2021a) and promulgated New York state drinking water maximum contaminant levels (MCLs) for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) (NYSDOH, 2021a).

1.1 BACKGROUND

SEDA is a 10,587-acre former military facility located in Seneca County near Romulus, New York. The former Depot is located between Seneca Lake and Cayuga Lake and is bordered by New York State Highway 96 to the east, New York State Highway 96A to the west, and sparsely populated farmland to the north and south (**Figure 1**). The facility was wholly owned by the United States Government and was operated by the Department of the Army between 1941 and 2000 with the primary mission to receive, store, maintain, and supply military items. In 1995, SEDA was designated for closure under the Department of Defense (DoD) Base Realignment and Closure (BRAC) process. To address employment and economic impacts associated with the closure of SEDA, the Seneca County Board of Supervisors established the Seneca Army Depot Local Redevelopment Authority (LRA) in October 1995. The primary responsibility assigned to the LRA was to prepare a plan for redevelopment of the SEDA property. Following a comprehensive planning process, a Reuse Plan and Implementation Strategy for Seneca Army Depot was completed and adopted by the LRA on 08 October 1996. The Seneca County Board of Supervisors subsequently approved this Reuse Plan on 22 October 1996. In 2005, after it had acquired portions of the former Depot from the Army, the Seneca County Industrial Development Agency (SCIDA) changed the planned use of land in many portions of the Depot. The three AOCs investigated as part of this ESI are located within an area designated as a Planned Industrial Development (PID)/Warehousing Area. Additional AOC specific history can be found in the Work Plan (Parsons, 2018).

PFAS are compounds used in the formulation of eight carbon based (C8) Aqueous Film Forming Foam (AFFF), which was used by the DoD to extinguish petroleum fires starting in approximately 1970. Long-chain PFAS used in C8 AFFF, specifically perfluorooctane sulfonic acid (PFOS) and perfluoroalkane sulfonic acids (PFSAs) such as perfluorohexane sulfonic acid (PFHxS) in legacy PFOS AFFF, and legacy fluorotelomer AFFF which contain polyfluorinated precursors which degrade to perfluoroalkyl carboxylic acids (PFCAs) including perfluorooctanoic acid (PFOA), are recognized as persistent, bioaccumulative, and toxic compounds (ITRC, 2021).

Although there is no known evidence that AFFF was used, or stored, at Seneca Army Depot, in January 2016, the EPA requested that the Army sample for PFAS in groundwater at the former Fire Training

Areas (FTA), and the OB Grounds. Three priority sites were identified and a PFAS Site Investigation (SI) was conducted at SEAD-25 (Fire Training and Demonstration Pad), SEAD-26 (Fire Training Pit and Area) and the former Airfield (Parsons, 2018). The presence of PFAS in groundwater was confirmed during the SI at two sites, SEAD 25 and SEAD 26, where firefighting training activities were historically conducted; the airfield was recommended as No Further Action (NFA) because the PFAS detections were below the then current screening criteria (Parsons, 2018). Based on the detection of PFOS and PFOA at concentrations above the EPA lifetime Health Advisory (HA) of 70 parts per trillion (nanograms per liter [ng/L]) of PFOS and PFOA combined, the NYSDEC requested that the Army further investigate the nature and extent of impacts in the SEAD-25 and SEAD-26 areas (NYSDEC, 2017). The ESI was conducted in phases between May 2019 and March 2021 in accordance with the procedures specified in the ESI Work Plan (Parsons, 2019) and through decision making made with a series of data summaries and comment-responses in coordination with EPA and NYSDEC (**Appendix K**). This ESI Report describes the objectives and activities completed for the investigation and presents the results and findings collected during the investigation. The location of SEDA and the three areas of concern (AOCs) is shown on **Figure 1**.

1.2 SCOPE AND OBJECTIVES

The objectives of the ESI are to further characterize and document the source(s) and fate and transport of PFAS in groundwater and surface water at the SEAD 25 and SEAD 26 sites as initially delineated in the 2017 PFAS SI (Parsons, 2018). The ESI will further characterize the potential sources, groundwater direction, and pathways for contaminant spread near the suspected source areas. During the work plan stage of the ESI, a third AOC, Building 103 – Fire House, was identified as a potential source of PFAS and was included as part of the ESI.

1.3 ENVIRONMENTAL SETTING

The following sections summarize the environmental setting of a portion of SEDA in which the three subject AOCs are located.

1.3.1 SURFACE WATER DRAINAGE

Surface water drainage in the area of the Fire House AOC is predominantly through underground stormwater infrastructure which collects and transports any overland flow in this area. The stormwater infrastructure roughly parallels the north-south roads in the former Administrative area accepting rain and melt water in catch basins along the roads and transporting runoff south and west (**Figure 2**). The underground infrastructure transitions to an open ditch just northeast of SEAD-25 (halfway between SWFH-03 and SW25-01). There are no surface water bodies in proximity to the Fire House AOC and no flooded areas were observed during the field events.

Surface water (as overland flow from precipitation events) in the vicinity of SEAD-25 is also conveyed predominantly through drainage ditches installed as part of the SEDA infrastructure. Within the area of the former SEAD-25 burn pad (adjacent to wells MW25-2 and MW25-3), water will flow radially off this highpoint into ditches surrounding the pad and will be transported southwest (**Figure 2**). The open drainage ditch within the northwest AOC boundary accepts discharge from the stormwater system

which transits the Administrative area. Several of the open drainage ditches combine approximately 3,000 ft downstream of the SEAD-25 boundary and transport the water west and northwest eventually forming Kendaia Creek approximately 1.5 miles downstream of surface water sample SW25-06. Kendaia Creek discharges into Seneca Lake approximately 2 miles west of the former SEDA boundary. The wooded area east of the SEAD-25 boundary is mapped as a Freshwater Forested/Shrub Wetland and the small field to the southwest is mapped as a Freshwater Emergent Wetland (USFWS, 2021). NYSDEC recognizes the drainage which includes surface water samples SW25-03, SW25-04, SW25-05, and SW25-06 and areas downstream as a Class C (suitable for fishing) waterbody. At the western SEDA boundary, where the drainage is named Kendaia Creek, the class remains as C, but the standard changes to TS (Trout Spawning) (NYSDEC, 2021b).

Within the SEAD-26 boundary there are no surface water bodies; however, the site is surrounded by drainage ditch infrastructure that conveys stormwater to a series of west flowing drainages (**Figure 3**). The central and southern drainage ditch are shallow and only flow during or shortly after precipitation events draining the central and southern portions of SEAD-26. The two ditches extend approximately 1,500 ft west of the AOC and discharge into an ephemeral marshy area located east of Fayette Road. The northern, west-trending drainage begins at the west end of 7th Street and accepts flow from the northern third of the SEAD-26 AOC. A portion of this flow is diverted into a small pond whose outlet flows back into the westerly flowing drainage. This drainage flows west across Fayette Road into the igloo area where it joins a north-south trending, south flowing drainage identified as Indian Creek at the former SEDA boundary. South of SEDA, several drainages combine and flow southwest where they discharge into Seneca Lake. The westerly flowing drainage and Indian Creek are identified as Class C waterbodies and the area around the pond and to the northwest are mapped as freshwater forested/shrub wetlands (NYSDEC, 2021c; USFWS, 2021).

1.3.2 GEOLOGY

The former Fire House, SEAD-25 and SEAD-26 are located in the east-central portion of the former SEDA. The topography has low relief and slopes to the southwest (Fire House, SEAD-25) and west (areas west of SEAD 25 and SEAD 26). The typical geology beneath the three AOCs and the local area is a thin mantle of glacial till overlying shale bedrock. The typical overburden consists of a thin layer of high fines content soils (where undisturbed) underlain by glacial till (unsorted clay, silt, sand and gravel) a few feet thick to approximately 15 feet in thickness that drains poorly. Minor amounts of fill are present within the former SEAD-25 pad area and within the SEAD-26 boundary, but the fill is difficult to distinguish from the native till and is likely the same material only reworked. Bedrock is soft, fissile, shale bedrock of the Moscow Formation. The shale has poor intergranular porosity and the flow of groundwater is expected to move through millimeter scale horizontal and vertical zones of porosity (bedding plane fractures and joints) on a localized scale (inches to several feet) (Merin, 1992; Parsons ES, 1997). The upper 10 feet of the bedrock typically has low rock quality designations (RQD) of less than 30%. RQD typically increases with depth (Parsons ES, 1998; Parsons, 2021a).

The stratigraphy near the Fire House is typically 5 to 10 feet of till overlying shale encountered at depths of 6 to 12 feet below ground surface (bgs). A bedrock low is present in the area of MWFH-04

with bedrock elevations increasing radially outward (**Appendix A, Figure A1**). Bedrock was observed within 3 feet of the surface at well MWFH-10D.

The stratigraphy within the SEAD-25 AOC consists of 1 to 2 feet of till and crushed shale fill at the ground surface localized to the area of the former burning pad and 2.5 to 9 feet of till which is thickest north and northeast of the former pad. A zone of weathered bedrock ranging in thickness between 0.5 and 4.5 feet is typically present above the shale bedrock. Bedrock isocontours from previous investigations and wells installed during the ESI indicate that the fire training pad at SEAD-25 occurs on a local natural high in the shale topography (Parsons, 1998; this study) (**Appendix A, Figure A2**). Outside the area of the AOC, bedrock elevations, and topography, decrease to the southwest.

At SEAD-26, the Fire Training Pit and surrounding areas within the AOC are comprised mostly of fill that varies in thickness up to 14 feet; however, the fill/till contact was not distinct at most drilling locations making this contact uncertain. Below the fill is glacial till ranging in thickness between 1 foot and 2.5 feet. Outside the AOC, till was the uppermost unit and ranged in thickness from 0.5 to 12 feet. A weathered shale zone 0.5 to 5 feet thick was typically present above the shale bedrock (Parsons, 1998; this study). The top of bedrock is highest within the AOC and consistently decreases, along with topography, towards the west (Parsons, 1998; this study) (**Appendix A, Figure A3**).

1.3.3 HYDROGEOLOGY

Groundwater is found seasonally in the overburden/weathered bedrock zone (subject to precipitation); however, the water in the wells is not potable due to low well yield. Wells installed in the area would not meet the requirements for a standard well yield test which includes a minimum four-hour period of stabilized (± 0.5 feet) drawdown while pumping at a constant flow rate (NYSDOH, 2021b). Recharge of the underlying shallow saturated zone is dependent on precipitation. Rainwater or snow melt slowly infiltrates into the till/weathered bedrock water bearing zone; however, during larger precipitation events, the infiltration rate is likely not high enough, and overland flow transports excess precipitation to local drainage ditches and low areas. Wells installed in the upper water bearing zone were installed to depths typically 15 feet bgs or less and wells installed in the lower water bearing zone (shallow fractured bedrock) were to depths of approximately 60 feet bgs although two wells (MW26-28D and MW26-32D) were extended to a depth of 100ft and 80ft bgs, respectively, due to a lack of recharge. The well construction details are provided in **Table 2** and **Appendix A**. Within the lower water bearing zone, well yields were observed to be poor with slow recharge and are not considered potable based on their inability to meet the state regulations for water wells. Based on discussions with local drillers in the areas, wells at a depth of greater than 150 feet are typically needed to obtain sufficient well yields. Groundwater elevations for eight seasons of gauging are presented in **Table 1**. Full synoptic gauging events of all ESI wells were conducted in September 2020 and March 2021.

The depth to groundwater near the Fire House AOC ranged between 5 and 15 ft bgs depending on season (**Table 1**). Groundwater flow direction is generally towards the southwest with some local variation (**Figure 2**). Groundwater elevations in well MWFH-10D were anomalously lower than surrounding wells suggesting that poor recharge in this well has inhibited the head developed in the well. A potential cause of this is the bedrock high at this location (**Appendix A**, **Figure A1**). Shallow

groundwater flowing to the southwest may divert away from this location inhibiting the recharge of this section of bedrock. Hydraulic conductivity is assumed to be similar to those found during previous studies at SEAD-25 and SEAD-26, discussed below.

The depth to groundwater at SEAD-25 varies seasonally, but generally occurs at depths of between 2 to 12 feet below ground surface. During wet periods, some areas were observed to have water depths less than 1-foot bgs (e.g., MW25-22, MW25-25, MW25-26, MW25-30, March 2021) (**Table 1**). Hydraulic conductivities determined in earlier studies were found to range from 1.0 x 10^{-5} cm/sec to 3.4 x10^{-3} cm/sec with an average of 6.1 x 10^{-4} cm/sec in the upper water bearing zone (Parsons ES, 1998). The radial groundwater flow centered on the former pad at SEAD 25 is believed to be a local phenomenon that is present because of the influence of the bedrock topographic mound below the former pad (**Appendix A**, **Figure A2**). Groundwater maps indicate a flattening of the water table outside the AOC developing into a southwest regional flow direction (outside the local area of SEAD 25) thus reducing the influence of the locally developed radial flow. During previous studies, vertical connection tests performed on six well pairs indicate that the till/weathered shale aquifer shows very small displacement, such that it was hard to measure (Parsons ES, 1998). Water elevations between shallow-deep wells pairs are generally similar with the exception of pair MW25-31/31D (**Table 1**). This difference is interpreted to be the result of screening the well within a section of rock with no fractures. Extremely poor recharge was encountered at this well during sampling (**Appendix D**). Hydraulic conductivity in the lower water-bearing zone (bedrock) was found to range between 1.8 x 10^{-5} cm/sec to 7.2 x 10^{-4} cm/sec with an average of 3.3 x 10^{-4} cm/sec.

At SEAD-26, the depth to groundwater varied from between 5 feet bgs in the spring to 17 feet bgs in the fall season (**Table 1**). During wet periods, water was observed near the surface at wells MW26-16 and MW26-20. Hydraulic conductivities in the upper water-bearing zone were found in earlier studies to range from 1.5 x 10^{-3} cm/sec to 3.9 x10^{-3} cm/sec with an average of 2.5 x 10^{-3} cm/sec (Parsons ES, 1998). The higher conductivity at SEAD 26 versus SEAD 25, and values typical for till (1 x 10^{-4} to 1 x 10^{-10} cm/sec [Freeze and Cherry, 1976]) is attributed to the presence of the fill beneath the site [Note: The RI was limited to wells within the AOC]. The groundwater flow at SEAD 26 is consistently to the west (**Figure 3**). The pond and wetland area west of SEAD-26 are interpreted as discharge areas which accept some component of the shallow groundwater.

Based on the thin saturated thicknesses observed during groundwater gauging, excessive drawdown during sampling at minimal pumping rates (100-200 mL/min) and poor recharge (i.e., wells often had to be allowed to recharge overnight or longer), the upper water bearing zone is not expected to be a productive water supply (or potable) for drinking water. While there is likely to be some regional recharge of precipitation through the till/weathered bedrock shallow groundwater zone to the underlying shallow bedrock groundwater, vertical groundwater interaction between the upper and lower water bearing zones is not expected to be as significant as preferential groundwater flow within the shallow fractured and weathered bedrock zone along the top of the shale bedrock. Sedimentation found within the bedrock core fractures at shallower depths would inhibit/limit water flow from shallower depths (Mozola, 1951; Parsons, 2021a). Neither water bearing zone would support a drinking water or irrigation water supply and are not considered potable sources of water. There are

no drinking water wells within the three AOCs investigated in this ESI and no known drinking water wells within the former SEDA boundary. There are unconfirmed local residences with drinking water wells approximately 2 miles west of the AOCs and outside the former SEDA boundary.

1.4 SCREENING LEVELS

Screening criteria for assessing data in the ESI are from the NYSDEC Part 375 Remedial Programs, Sampling, Analysis and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) guidance (NYSDEC, 2021a). Under this guidance, PFOA and PFOS should be further assessed and considered chemicals of potential concern (COPCs) in groundwater or surface water if concentrations are greater than or equal to 10 ng/L (parts per trillion [ppt]). ESI concentrations detected in groundwater, surface water, and from soil synthetic precipitation leaching procedure (SPLP) leachate were compared against this guidance value. For clarity of the distribution of PFAS, figures presented in the ESI included individual PFAS with concentrations greater than 100 ng/L.

SECTION 2.0 Field Investigation Activities

The following subsections summarize ESI field activities. Field activities were conducted between May and November 2019 and in accordance with the procedures specified in the ESI Work Plan (Parsons, 2019). Field logs are provided in **Appendices A – E** and full analytical results are provided in **Appendix F**.

2.1 FIELD SAMPLING

ESI field sampling activities included soil, groundwater, and surface water sampling and are summarized below. All samples were submitted to Eurofins-Test America, West Sacramento, California; a DoD approved (NELAC NELAP) and New York State certified laboratory. The ESI samples were analyzed for a total of 21 PFAS target analytes using Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS) with Isotope Dilution as specified in Table B-15 of the latest DoD Quality Systems Manual (QSM) (aka USEPA Method 537.1 modified). The 21 target analytes were chosen based on the list of PFAS included in the NYSDEC PFAS Guidance. Laboratory analytical reports are provided in **Appendix G**. Data validation summaries are provided in **Appendix H**.

2.1.1 SOIL SAMPLING

During the ESI, 11 soil borings were completed within the suspected source areas at the Fire House, SEAD-25 and SEAD-26 AOCs (**Figures 4, 5, 6**). Soil sampling was conducted based upon revised NYSDEC PFAS Guidance documented in the April 2020 ESI Data Memo (**Appendix K**). The lowest depth of the NYSDEC suggested 6 to 36 inch depth interval was targeted to account for the age of use at the sites (40-50 years ago). As requested by EPA, if heterogeneity was encountered in the subsurface materials, a sample of each material (i.e., fill and till) would be collected. Soil borings were advanced by hand using a hand auger. Soil sampling logs are provided in **Appendix B**.

- **Fire House**: three soil borings were advanced in the suspected source area between wells MWFH-04, MWFH-05, and MWFH-01. Samples were collected from a depth of 2.5 to 3 feet at locations SBFH-01 and SBFH-03. Two samples were collected from location SBFH-02 at depths of 0.17 to 2 feet bgs and 2.5 to 3 feet bgs (**Figure 4**).
- **SEAD-25:** three soil borings were collected from the suspected source area between wells MW25-02 and MW25-08. Locations SB25-18 and SB25-19 had two sample depths of 0.2 to 2 feet bgs and 2.5 to 3 feet bgs. SB25-19 was located within the area previously excavated and filled as part of a BTEX remediation effort. Location SB25-17 was collected from 2.5 to 3 feet bgs (**Figure 5**).
- **SEAD-26:** five soil borings were advanced in areas where former fire training activities may have taken place (e.g., former burning pit, drum storage area). Locations SB26-13, SB26-15, and SB26-17 had one sample each collected at a depth of 2.5 to 3 feet bgs. Locations SB26-14 and SB26-16 encountered fill and samples were collected from 0.2 to 2 feet and 2.5 to 3 feet bgs (**Figure 6**).

2.1.2 MONITORING WELL INSTALLATION, WELL DEVELOPMENT, AND GROUNDWATER SAMPLING

The initial phase of the ESI was the installation of 15 shallow monitoring wells. Three wells were installed downgradient of the former Fire House which had not been previously investigated. Six wells were installed around the perimeter of SEAD-25 to delineate the lateral extent of PFAS impacts observed in groundwater samples collected from existing wells during the SI. Six wells were installed at SEAD-26 to further delineate the extent of PFAS observed in SI temporary wells. These wells were installed upgradient, within the suspected source area, and downgradient of the suspected source area.

As wells were added and sampled, groundwater results were presented to EPA, NYSDEC and NYSDOH in a series of technical memorandums described in **Table 3** and provided in **Appendix K**. Based on comment responses and agreement between the Army and the stakeholders, additional monitoring wells, to total 53, were added in phased mobilizations to further delineate the three sites. Eight of these wells were installed to depths of 60-100 feet bgs to investigate the lower water bearing zone. Six of these locations were paired with a shallow well. Twelve existing wells at SEAD-25 were also sampled during the ESI effort. Details of ESI well construction, development and sampling techniques are provided in the Work Plan (Parsons, 2019). The well construction details are provided in **Table 2** and boring logs are provided in **Appendix A**.

Each new monitoring well was developed by removing any water added during the drilling process and then surged and purged at the screened interval to remove fine particles that may have accumulated in the well. Shallow wells were developed using a Waterra pump with HDPE-tubing and PFAS-free surge block and deep wells were developed using a PFAS-free submersible pump. Well development logs are available in **Appendix E**.

Groundwater samples were collected via low-flow sampling method using peristaltic pumps for the shallow wells and PFAS-free submersible pumps for the deeper wells. Water levels and total well depth were measured to the nearest 0.01 inch during several gauging events. Due to the phased nature of the well installation, synoptic gauging rounds were conducted in the September 2020 and March 2021 sampling events. Groundwater elevations are summarized in **Table 1** and groundwater contour maps were constructed using the water level measurements from the March 2021 event (**Figures 2 and 3**).

2.1.3 SURFACE WATER SAMPLING

During the ESI, 15 surface water locations were sampled (**Figure 7**). These locations were selected to be in a downgradient position that would receive runoff from suspected source areas or in a location where groundwater may discharge to surface water. One upgradient location was sampled east of SEAD-25. Detailed descriptions of the sampling locations are included with the results in Section 3. Surface water samples were typically collected following a period of clear weather with no significant storm events to ensure that these sample results represent ambient flow conditions; however, some locations were typically dry and could only be collected after a precipitation event. Surface water sampling logs are provided in **Appendix C**.

2.2 DECONTAMINATION PROCEDURES

Non-disposable sampling equipment was decontaminated between uses with Alconox® cleaning solution and rinsed with laboratory-provided PFAS-free water. For groundwater sampling, the flow-through cell and any non-dedicated equipment (i.e., water-level probe, multi-parameter instrument probe) that contacted groundwater was decontaminated between uses. Larger equipment such as drill rigs were cleaned with potable water using a high-pressure washer. A source blank sample from a potable water supply was analyzed for PFAS and results were used during the data validation process. Equipment blank samples were collected and analyzed for PFAS as prescribed in the Work Plan (Parsons, 2019).

SECTION 3.0 Field Investigation Results

This section presents the soil, groundwater and surface water analytical data generated during the ESI field activities along with a receptor summary and a look at data gaps.

3.1 ANALYTICAL RESULTS

The laboratory analytical results were compared to the project action limits (PALs) summarized in **Section 1.4**. Complete analytical results are presented in **Appendix F**. A summary of the soil SPLP, groundwater, and surface water concentrations are provided in **Tables 4, 5, 6**, respectively, to present concentrations of compounds with screening values (PFOA and PFOS) and total PFAS. **Figures 4–9B** present soil SPLP, groundwater, and surface water concentrations for PFOA, PFOS, total PFAS. Concentrations of PFOA or PFOS greater than the PAL (10 ng/L) are colored red. Additional individual PFAS with concentrations greater than or equal to 100 ng/L are also shown to present the compounds with the largest proportions of the total PFAS concentration.

3.1.1 SOIL

Soil sample results presented below are concentrations from leachate derived using the Synthetic Precipitation Leaching Procedure [East] (SPLP) to determine the potential mobility of PFAS into groundwater from site soils. Full analytical results are available in **Appendix F**. All soil samples were collected from areas where groundwater results suggest a potential DoD source area may exist.

Soil samples were collected from three locations at the Fire House near the presumed source (**Table 4**)(**Figure 4**). All three samples contained PFOA or PFOS concentrations above the PAL. The highest concentrations of PFOA and total PFAS were detected at location SBFH-01. Other PFAS components contributing to the total at SBFH-01 were perfluorobutanoic acid (PFBA), perfluoroheptanoic acid (PFHpA), PFHxS and perfluorohexanoic acid (PFHxA). Except for PFHxS which has a greater concentration than PFOA or PFOS in sample locations SBFH-02 and -03, the other compounds were less abundant. PFOS only exceeded the PAL at the deeper depth at location SBFH-02.

At SEAD-25, soil samples were collected from three locations (**Table 4**)(**Figure 5**). All three samples, and sub-depth samples, have concentrations of PFOA and PFOS that exceed the PAL. PFOS was the dominant compound at the two locations outside the former BTEX excavation area. SB25-19 was collected within a formerly excavated area that was backfilled with reworked native materials. The difference in abundance of PFOA versus PFOS may reflect differences in the materials and their origin between these areas. PFHxS, PFHxA and PFOSA were significant contributors to the total PFAS concentration at SEAD-25.

Within SEAD-26, soil samples were collected from five locations (**Table 4**)(**Figure 6**). Four of five samples contained PFOA or PFOS concentrations above the PAL. The maximum PFOA, PFOS and total PFAS concentrations were detected at locations SB26-14 (within the former training pit) and SB26-15 (downgradient of the training pit). Fluorotelemers (6:2 FTS and 8:2 FTS) were a large component of the total PFAS at location SB26-14. Other compounds that were abundant at the four locations with exceedances include PFHpA, PFHxS, PFHxA, and PFPeA.

The elevated presence of 6:2 FTS and 8:2 FTS in SEAD-26 soil location SB26-14 may be related to the use of modern short-chain C6 AFFF formulations (Fomtec, 2020). Degradation of precursors (PFOSA, 6:2 FTS, 8:2 FTS) detected in SEAD-25 and SEAD-26 soil may sustain PFOA, PFHxA and PFPeA concentrations in groundwater.

3.1.2 GROUNDWATER

Groundwater sampling was conducted in a phased approach between May 2019 and March 2021 as the PFAS well network expanded during the ESI. All ESI wells were sampled twice. A synoptic round of groundwater sampling was conducted in March 2021 (**Table 1**). The following paragraphs focus on the March 2021 sampling event results as this sampling event covered the largest spatial area during one time period. The magnitude of concentrations varies between the first time a well was sampled and the second sampling event; however, with the exception of two wells (MW25-24 and MW25-28) the regulatory conclusions are the same – a well that exceeded PALs the first time it was sampled also exceeded PALs in the March 2021 event. The overall increase in measured concentrations between previous sampling events and the March 2021 round is interpreted to be a result of significantly larger saturated thickness observed in the wells during this event. The higher water levels brought groundwater into contact with more vadose zone soil which were observed to contain concentrations of PFAS which could leach into groundwater as described above. Both the upper water bearing zone within the till/weathered bedrock formation and the lower water bearing zone within shale bedrock were investigated. Full analytical results are available in **Appendix F**.

Fire House

Samples from groundwater wells (MWFH-01 through MWFH-05, MWFH-09) immediately surrounding the Fire House were found to contain PFOA and PFOS concentrations above the PAL (**Table 5**) (**Figure 7**). The highest concentrations of PFOA (4,100 ng/L) and PFOS (7,700 ng/L) were observed in samples collected from wells MWFH-04 and MWFH-05 located 100 feet north and 175 feet northwest of the former Fire House. PFAS concentrations decrease substantially approximately 300 feet south of the Fire House source wells. PFAS concentrations were below the PAL and observed at low levels north (MWFH-06, 07, 08) and west (MWFH-11) of the Fire House. PFAS concentrations at the source area bedrock well (MWFH-09D) and the downgradient bedrock well (MWFH-10D) were below PALs and limited in total PFAS concentration. Samples collected from the source area bedrock well (MWFH-09D) are not impacted with PFAS; total PFAS concentrations were approximately 1 ng/L. Samples from the downgradient bedrock well (MWFH-10D) were below the PAL with minor (typically less than 5 ng/L) detections of PFCAs and PFSAs predominantly in the first round of sampling.

SEAD-25

Samples collected from groundwater wells located within the SEAD-25 boundary were all found to have PFOA and PFOS exceedances (**Table 5**) (**Figures 8A** and **8B**). The maximum concentrations of PFOA (580,000 and 115,000 ng/L) were found in samples from wells MW25-02 and MW25-31 located adjacent to the former fire training pad and the maximum concentration of PFOS (12,000 ng/L) was detected in samples from well MW25-08 downgradient of the former fire training pad (**Figure 8B**). PFAS concentrations decrease rapidly to the north (MW25-06/MW26-20) and south (MW25-13) of the AOC.

Southwest of the SEAD-25 AOC, PFOA and PFOS exceedances were observed in wells MW25-21 and MW25-22 (approximately 550 ft southwest of the former pad), and MW25-28 (approximately 1,200 ft southwest of the former pad) (**Figure 8A**). Samples from wells downgradient of MW25-28 were found to be non-detect for PFOA and PFOS in the March 2021 round and low estimated detections of PFOA were detected in the 2020 sampling round. Two wells (MW25-24 and MW25-33) east of SEAD-25 had samples with an exceedance of either PFOA or PFOS in the 2020 sampling round but were non-detect in the 2021 round. Samples from the source area bedrock well (MW25-31D) and the two downgradient bedrock wells (MW25-22D and MW25-34D) were below PALs.

SEAD-26

At SEAD-26, samples from several wells within the AOC exceed the PAL for PFOA or PFOS (**Table 5**)(**Figures 9A and 9B**). SEAD-26 is a long linear AOC with separate small potential fire training pads or associated infrastructure (e.g., bentonite lined pit, burned autos, former drum storage area). Groundwater samples collected from wells downgradient of these areas typically contained PFOA or PFOS exceedances (**Figure 9B**). Those wells without PAL exceedances typically have elevated total PFAS concentrations suggesting association with a nearby PFAS source area. The upgradient well, MW26-12, did not have exceedances of the PALs or elevated total PFAS concentrations. The highest PFAS concentrations (1,200 ng/L PFOA; 2,450 ng/L PFOS) were observed in samples from well MW26-28, downgradient (west) of the former bentonite lined burn pit (**Figure 9B**). Elevated concentrations were observed to continue in the downgradient direction (west) at wells MW26-16, MW26-20, and MW26-23 suggesting a narrow, west trending PFAS plume extending in the direction of groundwater flow. PFAS extents are bounded to the west by wells MW26-24 and MW26-25 where there were no PAL exceedances and total PFAS concentrations were non-detect or estimated. Similar to soil SPLP results from SB26-14, fluorotelemer (6:2 FTS and 8:2 FTS) concentrations were elevated in the groundwater at well location MW26-28. Within all three bedrock wells, PFOA and PFOS were non-detect.

Summary

Within the east central section of SEDA, three primary PFAS source areas were delineated in the upper water bearing zone during the ESI: 1) the immediate area around the former Fire House; 2) the former burn pad at SEAD-25; and 3) the SEAD-26 bentonite lined burn pit with additional smaller sources at former fire training features and a drum storage area within the SEAD-26 AOC. The plume at the former Fire House is bound to the north and west, but the extent of the plume to the east and south represent data gaps. Based on available data, the plume is not known to be migrating off-site (**Figure 10**). The majority of the PFAS impacts at SEAD-25 are within the AOC and extend southwest in a shallow, narrow plume approximately 1,200 feet extending further into the former SEDA property (**Figure 8A**). The PFAS impacts to the east of SEAD-25 may be an extension of the Fire House plume or they are potentially receiving a component of the radial flow towards the east off the SEAD-25 pad. Other possibilities include the migration of AFFF foam or rinsate from the Fire House through south flowing drainages into the wetland area or via air-borne transport. The extent of PFAS impacts in the area to the east of SEAD-25 and south of the Fire House is a data gap. Vertical migration of PFAS to the deeper water bearing zone is not evident as source area bedrock wells have low (< 5 ng/L) total PFAS concentrations

beneath source area shallow groundwater with total PFAS concentrations in the 1,000 to 10,000s ng/L (e.g., **Figure 7**, MWFH-09D and **Figure 8B**, MW25-31D). Based on available data PFAS is not a concern in the lower water bearing zone (bedrock).

The primary source area at SEAD-26 is the former bentonite lined burn pit (**Figure 9B**). Smaller secondary source areas are present north and south of the bentonite lined burn pit. The main source area plume extends to the west, further into the former SEDA property, in the expected groundwater flow direction (**Figure 9A**). Shallow groundwater likely discharges into a small pond and wetland area approximately 2,000 feet downgradient of the bentonite lined pit. A data gap exists downgradient of wells MW26-30 and MW26-31 (west of the former drum storage area). It is unknown if well MW26-19 missed the westerly expression of this secondary source or if it is localized to the area of the former drum storage area. Similar to the Fire House and SEAD-25 AOCs, downward migration of PFAS is not evident. Source area and plume core shallow groundwater had total PFAS concentrations ranging from 4,000 ng/L to 14,000 ng/L. The source area (MW26-28D) bedrock well is non-detect for PFOA/PFOS and total PFAS concentrations are less than 10 ng/L. The plume core bedrock wells (MW26-32D and MW26-23D) are non-detect for PFOA/PFOS and have total PFAS concentrations of non-detect and less than 10 ng/L, respectively. PFAS is not a concern in the lower water bearing zone (bedrock).

3.1.3 SURFACE WATER

Surface water was collected at three locations downgradient of the Fire House, six locations up- and down-gradient of SEAD-25, and six locations up- and down-gradient of SEAD-26. Surface water analytical results are summarized in **Table 6** and full analytical results are available in **Appendix F**. PFOA and PFOS concentrations were compared to the same NYSDEC Guidance Value (10 ng/L) as groundwater.

No surface water bodies are in proximity to the former Fire House; however, stormwater drainage infrastructure is present (**Figure 7**). North-south oriented stormwater lines and catchment basins transport overland flow to the south where they intercept an east-west drainage line which transports surface water to the west and southwest where it discharges into a southwest trending, open drainage ditch that passes by the northwest edge of SEAD-25. The three samples collected from catch basins downgradient of the Fire House were collected after a precipitation event otherwise there was no water. PFAS was detected at all three locations with the only exceedance (PFOS, 18 ng/L) at SWFH-03 (**Table 6**) (**Figure 7**).

Downgradient of SEAD-25, results from five surface water sample locations (SW25-01, -02, -04, -05, and -06) indicated PFOA and PFOS concentrations above the PAL (**Table 6**)(**Figure 8A**). PFAS concentrations varied depending on when the samples were collected with lower concentrations observed in March 2021. Higher surface water levels during this sampling event likely contributed to the lower concentrations observed due to rainwater dilution. During the 2019 and 2020 surface water sampling events, dryer conditions were observed and a greater proportion of the available surface water was likely a result of groundwater discharge supporting surface water flow. The upgradient location (SW25-03) was typically dry and could only be sampled once after a precipitation event. Results from this location suggest that no upgradient sources are contributing to the concentrations observed at SW25-04 and downstream. Groundwater infiltration is likely a source of PFAS for locations

downgradient of SEAD-25. Location SW25-01, and locations downstream, also receive a contribution of PFAS from runoff exiting the Administration Area to the northeast.

Six locations were sampled from three separate drainages exiting the SEAD-26 AOC (**Table 6**)(**Figure 9A**). Four locations were sampled in the northern most drainage which collects overland flow from the northern third of the SEAD-26 AOC as well as stormwater from the Warehousing area to the north of SEAD-26. One sample each was collected from the central and southern drainages which only had water after recent precipitation. None of the samples (SW26-03, -04, -05, -06) from the northern drainage had exceedances of the PALs; however, total PFAS concentrations in samples within and downstream of the pond suggest that shallow groundwater is discharging in this area and impacting the surface water (**Table 6**)(**Figure 9A**). Locations SW26-01 and SW26-02 both had exceedances of the PALs and elevated total PFAS concentrations. These two locations receive runoff from the areas with the highest soil and groundwater PFAS concentrations at SEAD-26. The data from SW26-02 reported elevated concentrations of 6:2 FTS similar to the upgradient well MW26-28 and soil sample SB26-14.

3.2 PFAS PROPORTIONAL ANALYSIS

Radar charts and bar graphs were prepared to illustrate concentrations and proportions of various PFAS in groundwater and surface water at select sample locations. The proportional analysis provided by radar charts can be used to identify distinct combinations of PFAS mixtures at each sample location. Radar charts and proportional analysis for select groundwater locations are shown in **Appendix J**, **Figures J1-J4**. Note that the PFAS chemicals shown on the radar charts were arranged clockwise from the 12 o'clock position (PFOS) in three groups: perfluoroalkyl sulfonates (PFSAs such as PFHxS and PFBS), perfluorinated carboxylates (PFCAs such as PFHxA and PFPeA), and fluorotelomer sulfonates (**Figure J1**). Within each of these three groups, PFAS chemicals were organized by carbon number from PFAS chemicals with more carbons to fewer carbons in the clockwise direction. Results from two rounds of data are shown in the radar charts. PFAS signatures between the first and second sampling event are typically similar in compound signature, but with different concentration order of magnitude.

A typical source area “type signature” consistent with former AFFF use is dominated by PFOS, minor other PFSAs and PFCAs, and a fluorotelomer sulfonate (6:2 FTS) (**Figure J1**). As organized in this report, this “type signature” forms a 2 o’clock shape on the radar charts (minute hand at PFOS, hour hand at PFHxS) with minor concentrations of PFSAs and PFCAs. The three primary source areas investigated during this ESI exhibit detected PFAS consistent with former AFFF use; however, the signatures are different between the sites and, in some cases, different than the expected 2 o’clock signature.

Transport of PFAS by advective flow away from a source area can alter concentrations and proportions of PFAS in groundwater through differential sorption in porous media. This can modify the PFAS signature in the downgradient direction through fractionation. For instance, PFOS (8-carbon sulfonate) is more sorptive than PFHxS (6-carbon sulfonate), which is more sorptive than PFBS (4- carbon sulfonate), resulting in fractionation, or changing proportions of concentrations along the flow direction. This is illustrated by a sequence of radar charts and a relative proportion bar chart along the flow path in **Appendix J**. As an example, wells MW26-28, MW26-16, MW26-20, and MW26-23 at SEAD-26 exhibit declining total PFAS concentration with increasing proportions of PFHxA, PFPeA, and PFBA

along the flow path (**Figure J4**). Examination of the different PFAS signatures at each site allows for comparison between the sites and plumes to determine if site histories are similar, if plumes overlap, and the potential identification of sources other than former AFFF use (e.g., influence from a nearby landfill site).

At the Fire House, two unique PFAS signatures are present at the three source area wells (**Figure J2**). Wells MWFH-04 and MWFH-09 have high concentrations of the PFAA precursor 6:2 FTS with lesser concentrations of its breakdown products [PFSAs (PFHxS) and PFCAs (PFBA, PFPeA)]. Well MWFH-04 also has a large proportion of PFOS forming the 2 o'clock signature shape versus well MWFH-09 which has a much lower proportion of PFOS. Well MWFH-05 has a different signature (forming 2:25 on a clock face) with PFOA as the predominant component, PFHxS a secondary component and minor PFCAs. The signature at well MWFH-05 is similar to those at SEAD-25. Downgradient wells are not far from the source area and thus have a similar signature, but with increased proportions of PFCAs and PFHxS.

Within the SEAD-25 AOC (former FTA pad area) the PFAS signature is consistent and forms the 2:25 clock shape with predominant PFOA concentration and secondary PFHxS and PFHxA concentrations (**Figure J3**). Moving away from the source area the signature is consistent; however, more PFCAs are present (e.g., downgradient wells MW25-22 and MW25-28). In contrast to the Fire House area, the fluorotelemers were essentially absent from the soil and groundwater at SEAD-25.

SEAD-26 provides another variation of PFAS signature (**Figure J4**). The 2 o'clock AFFF signature is present in the source area wells although highly enriched in PFCAs (PFPeA and PFHxA). As expected, downgradient wells are less abundant in the fluorotelemers and long-chain PFAAs (PFOS, PFOA).

- Primary source AOCs exhibit PFAS signatures with compounds consistent with former AFFF use.
- PFAS signatures are different at the three AOCs suggesting that different AFFF brands may have been over time or other environmental factors (e.g., excavation and fill at SEAD-25) are influencing the fractionation of PFAS over time.
- Changing proportions of PFAS (especially PFOS, PFHxS, PFBA, PFPeA) along the downgradient groundwater flow path from source area to plume edge indicate transport of PFAS by advective flow and associated differential sorption in porous media. This can modify the PFAS signature in the downgradient direction through fractionation.

3.3 RECEPTOR SURVEY

Potential receptors of concern are within the former SEDA boundary and include known or potential exposure pathways for both human exposure (i.e., public water supply wells and private wells) and environmental receptors (e.g., surface water bodies, wetlands). These receptors are potential human and environmental endpoints for exposure. One of the primary objectives of this ESI was to determine if there is a contaminant migration pathway between identified PFAS source areas and receptors.

There are no known public or private water supply wells within one-mile of the Fire House, SEAD-25 or SEAD-26 AOCs (**Figure 10**). There are no known private groundwater wells within the former SEDA

boundary. A water distribution building/reservoir (formerly Building 334R) located 1,700 ft south of SEAD-25 is now used by the Seneca County Water Department. This structure is partially below grade and was formerly uncovered. This building is outside the expected extent of the SEAD-25 PFAS plume bound to the north of Building 334R by non-detect data at wells MW25-23 and MW25-26 and does not source water from within the Depot. The nearest residential receptors are at the Spring Meadows Apartments located east of the Fire House AOC. These apartments are connected to the Seneca County Water District and do not use the local groundwater or have surface water bodies that exit the ESI AOCs. The nearest known downgradient drinking water wells are located along Route 96A approximately 2.5 miles west of the ESI AOCs (Parsons ES, 1994).

The Fire House and SEAD-25, and the known extents of their PFAS plumes, are located within the Planned Industrial / Office Development and Warehousing Area (PID area). The future land use of this area is light industry/commercial and currently has a groundwater restriction in place (Parsons, 2021b). The projected land use for the area west of SEAD-25 and SEAD-26 is farming with potential residential use. The landowner of this area was contacted, and they noted that the land immediately west of SEAD-26 was poor for farming (marshy, wetlands) and was more likely to be used for hunting or other recreation; however, the area noted on **Figure 10** is the closest location downgradient of SEAD-26 for potential building.

Exposure pathways for environmental receptors (e.g., surface water bodies and wetlands) include groundwater discharge to unnamed drainage ditches adjacent to SEAD-25 and SEAD-26 and an unnamed pond and wetland area west of SEAD-26. Sampling during this ESI indicates that PFAS was detected in the drainage ditches southwest of SEAD-25 and in the drainages and pond west of SEAD-26. ESI results indicate an exposure pathway exists between the activities at SEAD-25 and the PFAS observed in the drainage ditches southwest of SEAD-25, via groundwater discharge and ephemeral stormwater discharge from the Administration Area (Fire House). ESI results also indicate an exposure pathway is present between the activities at SEAD-26 and the drainage ditches, pond and wetland area west of SEAD-26. No human receptors are likely to be exposed to the water in the drainage ditches; however, farming activities (i.e., grazing livestock) were observed west of SEAD-26. The livestock may ingest water in the drainage ditches or eat vegetation exposed to contaminated groundwater. Groundwater discharge to natural wetland areas and plant uptake of PFAS contaminated groundwater is a potentially complete pathway as these plants may serve as a local food source for deer or other wildlife which may be targets for hunting activities within the former Depot.

3.4 DATA GAPS

The ESI was focused on determining the presence of PFAS, primarily in groundwater with a secondary focus on soil and surface water, at three AOCs. Areas where data gaps exist are bulleted below for potential future investigations.

Fire House:

- Further horizontal and vertical delineation of the PFAS impacts to soil.

- Horizontal delineation of the shallow groundwater to the east and south of the Fire House to determine the extent of PFAS impacts in these directions.

SEAD-25 AOC:

- Determine the extent of PFAS impacts in shallow groundwater to the east of the SEAD-25 pad area.
- Elevated PFAS concentrations were observed in well MW25-22. Further delineation of the extent of impacts in the shallow groundwater to the southwest and contribution of groundwater in this area to the drainage ditches.
- Additional investigation of the downgradient extent of PFAS impacts to surface water to determine if PFAS impacts are of concern to future receptors west of SEAD-25 or if PFAS impacts extend outside the former SEDA boundary.
- Characterization of the sediment near the SEAD-25 source area.
- Characterization of ecological impacts and potential ingestion pathway for humans (e.g., livestock and hunting).

SEAD-26 AOC:

- Additional delineation of the horizontal and vertical extent of PFAS impacts to soil.
- Further delineation of the horizontal PFAS impacts to shallow groundwater west of wells MW26-30 and MW26-31 (southern end of SEAD-26).
- Characterization and horizontal extent of PFAS impacts in surface water west of sample locations SW26-01 and SW26-02.
- Additional investigation of the downgradient extent of PFAS impacts to surface water west of sample location SW26-06.
- Characterization of sediment downgradient of SEAD-26.
- Characterization of ecological impacts and potential ingestion pathway for humans (e.g., livestock and hunting).

SECTION 4.0 Conclusions

The conclusions presented herein are based upon data from sampling events conducted during the SI (Parsons, 2018) and the ESI, and on an evaluation of the results compared to applicable PALs.

- The area surrounding the former SEDA is underlain by a thin, shallow water bearing zone within a low hydraulic conductivity glacial till and weathered shale formation. The bulk of groundwater flow is interpreted to occur along the till-weathered bedrock interface above the competent shale. Due to slow recharge and low yield, the groundwater conditions are poor and would not support use as a drinking water aquifer source.
- Soil SPLP results indicate that source area soils will likely contribute elevated concentrations of PFAS above the PAL to groundwater.
- Groundwater results indicate that the Fire House, SEAD-25 and SEAD-26 are all primary source areas for PFAS. Analytical results from all three AOCs were above applicable PALs.
- Groundwater results indicate that PFAS were detected within the upper water bearing zone with little impacts observed in the lower water bearing zone (bedrock). The geographic extent of the PFAS plume is consistent with the expected groundwater flow directions.
- The highest PFOA/PFOS impacts to groundwater were observed within the SEAD-25 AOC near the former pad area (total PFOA/PFOS 582,800 ng/L), north-northwest of the former Fire House (total PFOA/PFOS 11,600 ng/L), and downgradient of the former burning pit at SEAD-26 (total PFOA/PFOS 3,650 ng/L).
- Upgradient wells north of the Fire House and east of SEAD-26 suggest there is no off-site source contribution of PFAS to these sites.
- Analytical results from the surface water samples collected downgradient of the Fire House indicate that stormwater drainage from the Administrative Area is impacted with concentrations of PFAS above the PAL and are contributing to the surface water load in the drainage ditches downgradient of SEAD-25.
- Analytical results from surface water samples indicate that surface water in the drainage ditches west and southwest of SEAD-25 are impacted with PFAS concentrations above the PAL. The highest sum of PFOA/PFOS (172.5 ng/L) concentrations were found downgradient and immediately west of SEAD-25.
- Surface water analytical results from SEAD-26 indicate that surface water immediately west of the source areas are impacted with PFAS concentrations above the PAL. The highest PFOA/PFOS concentration (2,750 ng/L) was found west of the former burn pit. Lower concentrations, below the PAL, were found in the pond and drainages at the SEAD-26 plume toe.
- All three investigated AOCs exhibit PFAS signatures consistent with former AFFF use; however, the signatures are not consistent between the sites suggesting the use of various formulations of AFFF over the site history or potentially different environmental conditions which are affecting the fractionation of the various individual PFAS differently.
- The ESI results indicate there are no current exposure pathways to public water supplies from the three AOCs investigated. Potential environmental exposure pathways may exist downgradient of SEAD-25 and SEAD-26.

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TABLES

Table 1
Groundwater Elevation Data
Expanded Site Investigation
Seneca Army Depot Activity

Monitoring Well	Top of Riser Elevation (ft)	Well Depth (rel. TOC) (ft)	Groundwater Elevation (feet)									
			3/18/2019	5/20/2019	6/3/2019	9/18/2019	10/14/2019	6/18/2020	9/29/2020	3/18/2021	Min	Max
MW25-1	743.00	7.89	737.32	--	740.84	735.98	736.04	735.85	735.93	736.98	735.85	740.84
MW25-2	746.36	10.95	742.16	--	743.65	739.74	739.89	738.45	736.63	741.51	736.63	743.65
MW25-3	746.34	9.89	742.86	--	743.37	738.29	NA	738.44	736.88	741.49	736.88	743.37
MW25-6	744.44	14.10	741.13	--	740.35	735.30	734.94	735.74	732.63	739.34	732.63	741.13
MW25-8	742.46	5.50	740.71	--	739.93	737.31	737.31	737.41	737.33	739.81	737.31	740.71
MW25-9	742.36	5.49	740.85	--	739.96	737.38	737.36	737.41	N/A	740.03	737.36	740.85
MW25-10	743.01	6.45	740.63	--	739.11	736.81	N/A	736.76	N/A	739.84	736.76	740.63
MW25-13	739.64	5.54	737.15	--	736.85	734.56	734.59	734.59	734.47	735.69	734.47	737.15
MW25-15	741.00	7.30	737.92	--	N/A	734.05	734.05	733.77	734.04	737.66	733.77	737.92
MW25-17	743.94	10.90	741.79	--	741.03	735.99	735.59	736.59	733.23	740.28	733.23	741.79
MW25-18	744.35	11.01	740.21	--	740.58	736.55	736.34	736.65	733.63	739.05	733.63	740.58
MW25-19	741.95	12.11	738.97	--	738.68	732.30	732.30	732.90	731.97	738.04	731.97	738.97
MW25-20	740.78	14.05	--	735.58	731.82	733.79	733.67	--	734.03	736.18	731.82	736.18
MW25-21	732.44	9.03	--	723.93	729.91	731.22	731.36	--	730.82	731.44	723.93	731.44
MW25-22	733.70	14.10	--	733.70	729.20	731.59	732.00	--	730.45	733.50	729.20	733.70
MW25-22D	735.61	50.10	--	--	--	--	--	--	731.79	735.21	731.79	735.21
MW25-23	738.54	13.97	--	735.62	735.35	733.41	733.75	--	732.01	736.27	732.01	736.27
MW25-24	742.77	9.60	--	741.35	740.92	740.62	740.18	--	736.50	742.62	736.50	742.62
MW25-25	743.74	9.50	--	743.74	743.49	740.89	741.57	--	738.74	743.74	738.74	743.74
MW25-26	733.10	13.44	--	--	N/A	731.89	732.60	--	730.56	733.10	730.56	733.10
MW25-27	733.65	14.70	--	--	N/A	731.80	731.55	--	730.75	731.32	730.75	731.80
MW25-28	731.68	13.00	--	--	N/A	731.18	731.30	--	730.80	730.58	730.58	731.30
MW25-29	734.92	17.25	--	--	N/A	731.45	731.57	--	730.71	731.55	730.71	731.57
MW25-30	736.13	16.20	--	--	N/A	726.50	731.49	--	729.38	735.63	726.50	735.63
MW25-31	745.34	18.19	--	--	--	--	--	--	733.75	740.34	733.75	740.34
MW25-31D	744.63	83.46	--	--	--	--	--	--	733.28	737.84	733.28	737.84
MW25-32	733.40	16.70	--	--	--	--	--	--	722.60	723.20	722.60	723.20
MW25-33	750.15	16.43	--	--	--	--	--	--	741.44	745.57	741.44	745.57
MW25-34	712.01	18.18	--	--	--	--	--	--	700.96	706.99	700.96	706.99
MW25-34D	711.93	57.12	--	--	--	--	--	--	658.13	671.38	658.13	671.38
MW26-12	750.64	13.36	--	745.98	745.59	744.56	742.00	--	743.24	746.14	742.00	746.14
MW26-13	753.90	12.30	--	746.40	745.20	742.26	742.57	--	N/A	746.30	742.26	746.40
MW26-14	753.02	14.48	--	743.32	742.51	740.82	740.96	--	739.07	742.89	739.07	743.32
MW26-15	738.50	9.60	--	735.69	733.73	730.58	731.20	--	728.90	735.80	728.90	735.80
MW26-16	736.50	9.75	--	735.29	733.65	729.25	729.66	--	728.80	736.40	728.80	736.40
MW26-17	736.92	9.02	--	735.01	733.09	730.42	730.55	--	730.27	734.90	730.27	735.01
MW26-18	740.61	13.90	--	--	N/A	728.99	732.57	--	730.81	736.01	728.99	736.01
MW26-19	745.33	11.95	--	--	--	--	--	--	732.93	739.22	732.93	739.22

Table 1
Groundwater Elevation Data
Expanded Site Investigation
Seneca Army Depot Activity

Monitoring Well	Top of Riser Elevation (ft)	Well Depth (rel. TOC) (ft)	Groundwater Elevation (feet)									
			3/18/2019	5/20/2019	6/3/2019	9/18/2019	10/14/2019	6/18/2020	9/29/2020	3/18/2021	Min	Max
MW26-20	721.64	13.21	--	--	N/A	719.62	720.19	--	717.44	721.44	717.44	721.44
MW26-21	724.74	17.79	--	--	--	--	--	--	716.64	722.11	716.64	722.11
MW26-22	727.04	17.55	--	--	--	--	--	--	718.99	723.74	718.99	723.74
MW26-23	719.75	17.75	--	--	--	--	--	--	712.55	716.35	712.55	716.35
MW26-23D	718.60	58.21	--	--	--	--	--	--	712.50	716.77	712.50	716.77
MW26-24	718.71	16.80	--	--	--	--	--	--	707.91	716.51	707.91	716.51
MW26-25	719.20	17.18	--	--	--	--	--	--	708.50	715.82	708.50	715.82
MW26-26	756.29	24.09	--	--	--	--	--	--	738.69	743.10	738.69	743.10
MW26-27	757.13	20.20	--	--	--	--	--	--	739.83	747.38	739.83	747.38
MW26-28	755.73	20.40	--	--	--	--	--	--	738.73	741.18	738.73	741.18
MW26-28D	753.87	100.00	--	--	--	--	--	--	736.42	741.77	736.42	741.77
MW26-29	754.54	20.31	--	--	--	--	--	--	737.79	741.51	737.79	741.51
MW26-30	753.09	19.05	--	--	--	--	--	--	737.64	742.27	737.64	742.27
MW26-31	754.43	17.65	--	--	--	--	--	--	740.23	744.79	740.23	744.79
MW26-32D	739.46	80.43	--	--	--	--	--	--	728.76	734.53	728.76	734.53
MWFH-01	753.34	16.10	--	744.89	744.41	743.66	743.95	--	742.44	744.24	742.44	744.89
MWFH-02	752.32	15.32	--	743.38	743.09	742.82	742.91	--	742.15	743.01	742.15	743.38
MWFH-03	752.48	16.05	--	739.19	737.47	743.36	743.32	--	743.41	744.43	737.47	744.43
MWFH-04	752.94	17.21	--	--	N/A	744.21	744.19	--	744.17	744.19	744.17	744.21
MWFH-05	755.56	19.35	--	--	N/A	N/A	746.63	--	745.18	747.53	745.18	747.53
MWFH-06	760.39	18.25	--	--	--	--	--	--	751.87	753.94	751.87	753.94
MWFH-07	757.28	18.00	--	--	--	--	--	--	747.53	750.68	747.53	750.68
MWFH-08	755.45	17.90	--	--	--	--	--	--	746.05	750.20	746.05	750.20
MWFH-09	757.33	22.20	--	--	--	--	--	--	735.79	747.52	735.79	747.52
MWFH-09D	756.90	64.31	--	--	--	--	--	--	744.65	747.39	744.65	747.39
MWFH-10D	749.47	58.55	--	--	--	--	--	--	698.43	729.37	698.43	729.37
MWFH-11	754.37	27.60	--	--	--	--	--	--	728.62	746.02	728.62	746.02

Footnotes:
1) N/A - Well was dry when gauged, elevation and saturated thickness could not be calculated

Table 2
Monitoring Well Construction Details
PFAS Expanded Site Investigation
Seneca Army Depot Activity

Site	Location ID	Easting	Northing	Ground Elevation (ft)	Top of PVC casing (ft)	MW Installation Date	Bottom Fill / Top Till (ft bgs)	Weathered Shale (ft bgs)	Competent Shale (ft bgs)	Borehole Depth (ft bgs)	Well Diameter (in)	Screen Length (ft)	Screened Interval (ft bgs)	Choker Sand / Screen Sand (ft bgs)	Bentonite (ft bgs)
Fire House	MWFH-01	752049.495	999522.453	753.59	753.34	5/9/2019	--	5.5	6	15	2	10	5-15	3-15	1-3
Fire House	MWFH-02	751993.029	999412.578	752.49	752.32	5/9/2019	--	2	5.5	15	2	10	5-15	3-15	1-3
Fire House	MWFH-03	752255.462	999435.952	752.95	752.48	5/9/2019	--	5.5	10	15	2	10	5-15	3-15	1-3
Fire House	MWFH-04	751952.139	999706.222	753.23	752.94	9/10/2019	--	11.8	12	18.5	2	10	8-18	6-18	1-6
Fire House	MWFH-05	752174.074	999766.042	755.68	755.56	9/16/2019	--	5.9	6.5	20.5	2	10	10-20	6-20	0.5-6
Fire House	MWFH-06	752334.023	1000028.42	757.63	760.392	6/17/2020	--	5.3	6	15	2	10	5-15	3.5-15	1.5-3.5
Fire House	MWFH-07	752054.126	999907.974	754.609	757.283	6/16/2020	--	5.25	6	15	2	10	5-15	3.5-15	1.5-3.5
Fire House	MWFH-08	751831.226	999970.869	752.83	755.45	6/17/2020	--	5.4	6.5	15	2	10	5-15	3.5-15	1.5-3.5
Fire House	MWFH-09	752050.316	999737.978	754.628	757.331	8/4/2020	--		9	20	4	15	5-15	4-16	2.5-4
Fire House	MWFH-09D	752059.272	999744.904	754.674	756.898	8/5-8/6/20	--		9	62	4	20	42-62	38-40 40-62	33-38
Fire House	MWFH-10D	751689.146	999408.346	749.95	749.467	8/4, 8/6/20	--	2	2.5	57.5	4	20	37-57	33-35 35-57.5	28-33
Fire House	MWFH-11	751501.157	999687.92	751.549	754.368	8/10/2020	--	4	5.5	25	2	20	5-25	4.5-25	2.5-4.5
SEAD 25	MW25-20	750817.946	998381.892	740.78	740.78	5/10/2019	--	5.5	10	14.2	2	10	4.2-14.2	2.2-14.2	0.5-2.2
SEAD 25	MW25-21	750289.254	997965.703	732.71	732.44	5/7/2019	--	2.5	4.5	10	2	5	5-10	3-5	1-3
SEAD 25	MW25-22	750616.931	997729.833	733.73	733.7	5/13/2019	--	3.5	6	14.5	2	10	4.5-14.5	2.5-14.5	1.0-2.5
SEAD 25	MW25-22D	750609.31	997725.04	733.59	735.608	7/1/2020	--	2	4.5	49	2	10	39-49	35-37, 37-49	27-34
SEAD 25	MW25-23	751122.672	997618.25	738.59	738.54	5/8/2019	--	5	15	15	2	10	5-15	3-15	1-3
SEAD 25	MW25-24	751884.91	998241.022	742.89	742.77	5/17/2019	--	6	8.5	10	2	5	5-10	3-10	1-3
SEAD 25	MW25-25	751510.438	998499.123	743.93	743.74	5/16/2019	--	5	6	10	2	5	5-10	3-10	1-3
SEAD 25	MW25-26	750780.648	997444.539	733.56	733.1	9/12/2019	--	1	2.5	14	2	10	4-14	2-14	1-2
SEAD 25	MW25-27	750335.367	997408.087	733.71	733.65	9/11/2019	--	6.6	7	15	2	10	5-15	3-15	1-3
SEAD 25	MW25-28	749900.611	997367.087	731.33	731.68	9/10/2019	--	2.25	3.5	13.5	2	10	6.5-11.5	4.5-11.5	2.5-4.5
SEAD 25	MW25-29	749756.27	997963.82	735.06	734.92	9/11/2019	--	4	4.5	19	2	10	7-17	5-19	1-5
SEAD 25	MW25-30	750274.547	998536.202	736.28	736.13	9/13/2019	--	8.75	9	17	2	10	7-17	5-17	1-5
SEAD 25	MW25-31	750939.578	998015.804	742.766	745.339	6/30/2020	2	4	7	16	2	10	6-16	4-16	2-4
SEAD 25	MW25-31D	750937.943	998025.134	742.96	744.633	7/2/2020	2	4	7	81	2	40	41-81	37-39 39-81	32-37
SEAD 25	MW25-32	749439.146	996875.942	730.488	733.4	6/24/2020	--	4.6	6.5	14	2	10	4-14	3-14	1-3
SEAD 25	MW25-33	752067.933	998442.235	747.281	750.148	6/24/2020	--	4.7	6.5	14	2	10	4-14	3-14	1-3
SEAD 25	MW25-34	747819.412	996401.2	709.45	712.01	6/25/2020	--	6.11	8.8	16	2	10	6-16	4-16	2-4
SEAD 25	MW25-34D	747819.583	996393.811	709.362	711.934	6/26/2020	--	6.11	8.8	54	2	10	44-54	40-42 42-54	35-40

Table 2
Monitoring Well Construction Details
PFAS Expanded Site Investigation
Seneca Army Depot Activity

Site	Location ID	Easting	Northing	Ground Elevation (ft)	Top of PVC casing (ft)	MW Installation Date	Bottom Fill / Top Till (ft bgs)	Weathered Shale (ft bgs)	Competent Shale (ft bgs)	Borehole Depth (ft bgs)	Well Diameter (in)	Screen Length (ft)	Screened Interval (ft bgs)	Choker Sand / Screen Sand (ft bgs)	Bentonite (ft bgs)
SEAD 26	MW26-12	751394.834	992289.862	750.9	750.64	5/14/2019	--	8.5	10	13	2	8	5-13	3-13	1-3
SEAD 26	MW26-13	751174.545	992370.888	753.9	753.9	5/13/2019	--	8	10	13	2	8	8-13	3-13	1-3
SEAD 26	MW26-14	751189.791	992104.878	753.21	753.02	5/14/2019	--	12-15	not obs	15	2	10	5-15	3-15	1-3
SEAD 26	MW26-15	750486.012	992470.374	738.68	738.5	5/15/2019	--	4.5	5	10	2	5	5-10	3-10	1-3
SEAD 26	MW26-16	750528.318	992217.673	737.04	736.5	5/15/2019	--	4	6	10	2	5	5-10	3-10	1-3
SEAD 26	MW26-17	750582.888	991951.999	736.9	736.92	5/15/2019	--	3	5	10	2	5	5-10	3-10	1-3
SEAD 26	MW26-18	750947.814	992478.14	740.51	740.61	9/16/2019	--	1.5	4	15	2	10	5-15	3-15	1-3
SEAD 26	MW26-19	750999.488	991579.499	742.32	745.33	6/24/2020	--	1	7	15	2	10	5-15	3-15	1-3
SEAD 26	MW26-20	749593.834	992246.233	721.7	721.64	9/12/2019	--	3.2	4	13.5	2	10	3.5-13.5	1.5-13.5	0.5-1.5
SEAD 26	MW26-21	749570.27	992431.04	722.078	724.739	6/18/2020	--	2.1	7	15	2	10	5-15	3-15	1-3
SEAD 26	MW26-22	749634.088	992001.771	724.114	727.037	6/17/2020	--	2.2	6	15	2	10	5-15	3-15	1-3
SEAD 26	MW26-23	749104.945	992200.452	716.941	719.75	8/26/2020	--	4	7.5	15	2	10	5-15	3.5-15	2.5-3.5
SEAD 26	MW26-23D	749090.862	992203.612	716.649	718.6	8/26/2020	--	4	8	57	2	15	42-57	38-40 40-57	30-38
SEAD 26	MW26-24	748317.94	992286.84	716.616	718.709	8/25/2020	--	6.5	11.5	15	2	10	5-15	3.5-15	2.5-3.5
SEAD 26	MW26-25	748117.778	992605.681	716.485	719.198	8/24/2020	--	6.5	9	15	2	10	5-15	3.5-15	2.5-3.5
SEAD 26	MW26-26	751138.597	992470.151	753.23	756.291	6/18/2020	--	12	14.5	21.5	2	10	11.5-21.5	9.5-21.5	7.5-9.5
SEAD 26	MW26-27	751268.152	992289.623	753.3	757.125	6/19/2020	--	10	14	16.5	2	10	6.5-16.5	4.5-16.5	2.5-4.5
SEAD 26	MW26-28	751128.133	992189.492	752.219	755.733	6/22/2020	--	12	15.5	17	2	10	7-17	5-17	3-5
SEAD 26	MW26-28D	751126.303	992203.201	752.233	753.87	7/10/2020	--	12	15.5	100	2	50	50-100	45-47 47-100	35-45
SEAD 26	MW26-29	751125.72	991988.324	750.984	754.54	6/22/2020	9.5	12	14	17	2	10	7-17	5-17	2-5
SEAD 26	MW26-30	751140.252	991693.413	749.684	753.086	6/23/2020	6	6.75	12	16	2	10	6-16	4-16	2-4
SEAD 26	MW26-31	751203.545	991598.889	751.15	754.428	6/26/2020	--		9	15	2	10	5-15	3-15	1-3
SEAD 26	MW26-32D	750534.874	992190.685	737.9	739.458	7/7/2020	--	4	6	79	2	40	39-79	35-37 37-79	30-35

Table 3
Summary of ESI Investigation Phases
Expanded Site Investigation
Seneca Army Depot Activity

Document Name	Document Date	Samping Proposed	Sampling Phase ID	Field Sampling Dates
SI Work Plan	February 2018	Initial PFAS SI at SEAD-25, SEAD-26, and Airfield	SI	April/May 2017
ESI Work Plan	February 2020	Added Fire House (new AOC) and dropped Airfield (below standards at the time). Added permanent MWs to SEAD-26 and SW to SEAD-25.	ESI Phase I	May 2019
ESI Memo	24 July 2019	Fire House: additional shallow MWs to further delineate source area; added SW sampling. SEAD-25: additional shallow lateral and downgradient MWs to further define plume SEAD-26: additional shallow MWs to define plume toe	ESI Phase II	October 2019
ESI Memo	08 April 2020	Fire House: additional shallow and deep source area delineation; added source area SO sampling. SEAD-25: additional shallow lateral and downgradient GW sampling to further define plume; additional source and downgradient deep GW delineation; added source area SO sampling. SEAD-26: additional shallow and deep downgradient GW delineation; added downgradient SW sampling; added source area SO sampling All AOCs: Recommendation for second round of GW and SW sampling.	ESI Phase III	Summer 2020
ESI Memo	03 December 2020	Recommendation for second round of GW and SW sampling to be conducted in Spring 2021.	ESI Phase IV	March 2021

Notes:

1) Technical Memorandums provided in Appendix K.

Table 4
Summary of Soil Analytical Results
Expanded Site Investigation
Seneca Army Depot Activity

Soil Boring Location	Sample Depth Interval (ft)	Material	August 2020		
			PFOA	PFOS	Total PFAS
SBFH-01	2.5 - 3	Till	160	8.9	503
SBFH-02	0.17 - 2	Fill	10	13	103
SBFH-02	2.5 - 3	Till	1.6 J	4.9	19.6
SBFH-03	2.5 - 3	Till	14	2.5 J	33.7
SB25-17	2.5 - 3	Till	450	920	1,751
SB25-18	0.17 - 2	Fill	520	1,900	3,439
SB25-18	2.5 - 3	Till	420	2,400	3,475
SB25-19	0.17 - 2	Fill	340	120	842
SB25-19	2.5 - 3	Till	1,100	270	2,238
SB26-13	0 - 2.5	Till	0.8 J	2.2 J	78.2
SB26-14	0 - 2.5	Fill	200	1,500	3,308
SB26-14	2.5 - 3	Till	280	250	1,567
SB26-15	2.5 - 3	Till	39	470	711
SB26-16	0 - 2.2	Fill	29	15	251
SB26-16	2.5 - 3	Till	18	1.9 J	108
SB26-17	2.5 - 3	Till	16	36	169

Notes:

a) Concentrations are from leachate after SPLP analysis.

b) Units are ng/L.

c) Total PFAS is the sum of 21 PFAS compounds. NDs were not counted in the total PFAS value.

d) Sample duplicate pairs were averaged.

J estimated detected value

indicates PFOA or PFOS concentration above the NYSDEC guidance of 10 ng/L

Table 5
Summary of Groundwater Analytical Results
Expanded Site Investigation
Seneca Army Depot Activity

Well ID	SI			ESI												
				May 2019			October 2019			June - Sept 2020			March 2021		
	PFOA	PFOS	Total PFAS	PFOA	PFOS	Total PFAS	PFOA	PFOS	Total PFAS	PFOA	PFOS	Total PFAS	PFOA	PFOS	Total PFAS
MWFH-1	--	--	--	210 J	220	1,660	--	--	--	--	--	--	960	790	875
MWFH-2	--	--	--	22.5	6.85	178	--	--	--	--	--	--	41	53	343
MWFH-3	--	--	--	--[a]	--[a]	--[a]	2.3	ND	61	--	--	--	64	1.7	548
MWFH-4	--	--	--	--	--	--	1,300	4,200 J+	17,688	--	--	--	3,900	7,700	42,260
MWFH-5	--	--	--	--	--	--	4,100 J+	440 J+	9,195	--	--	--	1,100	ND	2,848
MWFH-6	--	--	--	--	--	--	--	--	--	0.66 J	ND	2.26	ND	ND	2.71
MWFH-7	--	--	--	--	--	--	--	--	--	0.66 J	ND	4.51	0.59	ND	2.62
MWFH-8	--	--	--	--	--	--	--	--	--	0.77 J	ND	3.37	0.51	ND	5.11
MWFH-9	--	--	--	--	--	--	--	--	--	41	65	856	510	170	5,120
MWFH-9D	--	--	--	--	--	--	--	--	--	0.52 J	ND	1.1	ND	ND	1
MWFH-10D	--	--	--	--	--	--	--	--	--	1.7	6.6 J	23.4	1.1	3.4	6.6
MWFH-11	--	--	--	--	--	--	--	--	--	ND	ND	9.12	0.54	ND	4.15
MW25-1	10,000	490	18,237	--	--	--	--	--	--	--	--	--	25,000	720	47,570
MW25-2	89,000	3,900	128,755	--	--	--	--	--	--	--	--	--	580,000	2,800	687,670
MW25-3	7,500	2,300	16,634	--	--	--	--	--	--	--	--	--	13,000	960	20,405
MW25-6	140	5.8	284	--	--	--	--	--	--	--	--	--	66	2.5	206
MW25-8	17,000	8,300	69,800	--	--	--	--	--	--	--	--	--	26,000	12,000	101,278
MW25-9	18,000	1,400	31,007	--	--	--	--	--	--	--	--	--	31,000	1,900	45,558
MW25-10	2,050	245	5,446	--	--	--	--	--	--	--	--	--	3,300	490	10,818
MW25-13	70	1.4 J	120	--	--	--	--	--	--	--	--	--	15	ND	36
MW25-15	6,850	485	12,220	--	--	--	--	--	--	--	--	--	9,500	410	16,052
MW25-17	11,000	2,600	34,807	--	--	--	--	--	--	--	--	--	19,000	6,100	75,910
MW25-18	550	20	1,705	--	--	--	--	--	--	--	--	--	810	45	2,725
MW25-19	10,000	2,100	29,293	--	--	--	--	--	--	--	--	--	11,000	1,500	34,320
MW25-20	--	--	--	8.15	ND	39.9	--	--	--	--	--	--	3.8	2.7	24.8
MW25-21	--	--	--	720 J	140 J	1,680	--	--	--	--	--	--	200	6.1	420
MW25-22	--	--	--	1000 J+	16 J	2,022	--	--	--	--	--	--	1,300	10	2,364
MW25-22D	--	--	--	--	--	--	--	--	--	--	--	--	1.8	ND	2.3
MW25-23	--	--	--	3.35	ND	15.4	--	--	--	--	--	--	3.1	ND	11
MW25-24	--	--	--	3.7	11	52.7	--	--	--	--	--	--	ND	ND	1.4
MW25-25	--	--	--	0.79 J	ND	9.51	--	--	--	--	--	--	3	7.7	39.1
MW25-26	--	--	--	--	--	--	ND	ND	ND	--	--	--	ND	ND	ND
MW25-27	--	--	--	--	--	--	0.94 J	ND	24.2	--	--	--	ND	ND	8.5
MW25-28	--	--	--	--	--	--	11	8.1	67.2	--	--	--	5.8	1.9	26.7
MW25-29	--	--	--	--	--	--	0.53 J	ND	0.9	--	--	--	ND	ND	ND
MW25-30	--	--	--	--	--	--	ND	ND	4.7	--	--	--	7.6	ND	8.3
MW25-31	--	--	--	--	--	--	--	--	--	65,000 J+	420	77,636	130,000	1,900	141,825
MW25-31D	--	--	--	--	--	--	--	--	--	ND	ND	3.5	2	ND	1.8
MW25-32	--	--	--	--	--	--	--	--	--	ND	ND	10.4	ND	ND	1.5
MW25-33	--	--	--	--	--	--	--	--	--	61	ND	75.1	ND	ND	0.5
MW25-34	--	--	--	--	--	--	--	--	--	0.96 J	ND	0.96	ND	ND	ND
MW25-34D	--	--	--	--	--	--	--	--	--	1.1 J	ND	21.1	ND	ND	13.7
MW26-12	--	--	--	0.52 J	ND	1.64	--	--	--	--	--	--	ND	ND	1.3
MW26-13	--	--	--	7.9	ND	302	--	--	--	--	--	--	10	5	376
MW26-14	--	--	--	4.5	6.2	95.2	--	--	--	--	--	--	2.4	ND	54.4
MW26-15	--	--	--	0.54 J	ND	0.54	--	--	--	--	--	--	ND	ND	0.69
MW26-16	--	--	--	330 J+	785 J	3,788	--	--	--	--	--	--	400	690	4,715
MW26-17	--	--	--	3.7	ND	265	--	--	--	--	--	--	1.4	1.2	28
MW26-18	--	--	--	--	--	--	18	11	346	--	--	--	5	2.6	74
MW26-19	--	--	--	--	--	--	--	--	--	4.5	ND	26.2	0.92	ND	14.9
MW26-20	--	--	--	--	--	--	24.5	9.75 J	1,004	--	--	--	8.6	3.8	281
MW26-21	--	--	--	--	--	--	--	--	--	ND	ND	6.81	ND	ND	ND
MW26-22	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	ND
MW26-23	--	--	--	--	--	--	--	--	--	11	ND	317	1.5	ND	37
MW26-23D	--	--	--	--	--	--	--	--	--	ND	ND	7.9	ND	ND	10.1
MW26-24	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	3.31
MW26-25	--	--	--	--	--	--	--	--	--	ND	ND	1.58	ND	ND	ND
MW26-26	--	--	--	--	--	--	--	--	--	1 J	ND	113.6	190	5.5	2,842
MW26-27	--	--	--	--	--	--	--	--	--	2.7	1.7 J	133	20	2.2	923
MW26-28	--	--	--	--	--	--	--	--	--	535	2,300	7,498	1,100	2,400	14,364
MW26-28D	--	--	--	--	--	--	--	--	--	ND	ND	1.3	ND	ND	7.2
MW26-29	--	--	--	--	--	--	--	--	--	8.2	ND	158	25	1	674
MW26-30	--	--	--	--	--	--	--	--	--	37	9.7	757	130	110	2,386
MW26-31	--	--	--	--	--	--	--	--	--	41	7.3	463	77	17	628
MW26-32D	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	ND

Notes:

a) Well was dry and could not be sampled.

b) Units are ng/L.

c) Total PFAS is the sum of 21 PFAS compounds. NDs were not counted in the total PFAS value.

d) Sample duplicate pairs were averaged.

e) Wells MWFH-06, MWFH-07, MWFH-08, MW26-21, MW26-22 were sampled in June 2020.

f) Wells MWFH-09, MWFH-09D, MWFH-10D, MWFH-11, MW25-22D, MW25-31, MW25-31D, MW25-32, MW25-33, MW25-34, MW25-34D, MW26-23, MW26-23D, MW26-24, MW26-25, MW26-26, MW26-27, MW26-28, MW26-28D, MW26-29, MW26-30, MW26-31, MW26-32D were sampled between mid-August and early Sept 2020.

g) SI results are shown from existing wells at SEAD-25 only. No other permanent wells were sampled during the SI.

-- = well not installed or was previously sampled

ND = not detected

J estimated detected value

J + estimated detected value, but may be biased high

indicates PFOA or PFOS concentration above the NYSDEC guidance of 10 ng/L

Table 6
Summary of Surface Water Analytical Results
Expanded Site Investigation
Seneca Army Depot Activity

SW Location	June 2019			August 2020			March 2021		
	PFOA	PFOS	Total PFAS	PFOA	PFOS	Total PFAS	PFOA	PFOS	Total PFAS
SWFH-01	--	--	--	8.4	9.6	35	3.7 J	6.4	65.7
SWFH-02	--	--	--	3.8	6.6	28.4	1.5 J	2.1 J	5.4
SWFH-03	--	--	--	2.4	18	48.5	7.5 J+	27 J+	63.8
25SW-01	26	78	334	7.2	16	61.2	30	34	237
25SW-02	115	57.5	476	27	62	183	102	25.5	343
25SW-03	--	--	--	--[a]	--[a]	--[a]	0.54 J	1.1 J	5.6
25SW-04	--	--	--	20	27	122	5	2 J	16.6
25SW-05	--	--	--	22	51	792	ND	ND	ND
25SW-06	--	--	--	29	34	162	24	5.3	72.5
SW26-01	--	--	--	--[a]	--[a]	--[a]	28	18	268
SW26-02	--	--	--	--[a]	--[a]	--[a]	650	2,100	8,071
SW26-03	--	--	--	0.93 J	3.3 J	9.8	2.45	1.65 J	18.2
SW26-04	--	--	--	2.35	3.65 J	29.4	4.4	7.0	76.2
SW26-05	--	--	--	3.2	4.8	44.2	3.9	6.2	64.2
SW26-06	--	--	--	2.7	5.8	43.7	3.3	5.1	46.9

Notes:

a) Locations were dry and could not be sampled.

b) Units are ng/L.

c) Total PFAS is the sum of 21 PFAS compounds. NDs were not counted in the total PFAS value.

d) Sample duplicate pairs were averaged.

-- = location not sampled

ND = not detected

J estimated detected value

J + estimated detected value, but may be biased high

indicates PFOA or PFOS concentration above the NYSDEC guidance of 10 ng/L

FIGURES

Seneca Army Depot Activity

0 3.75 7.5 15 Miles

Seneca Army Depot Activity

Building 103
Former Fire House

SEAD-25

SEAD-26

0 2,000 4,000 8,000 Feet

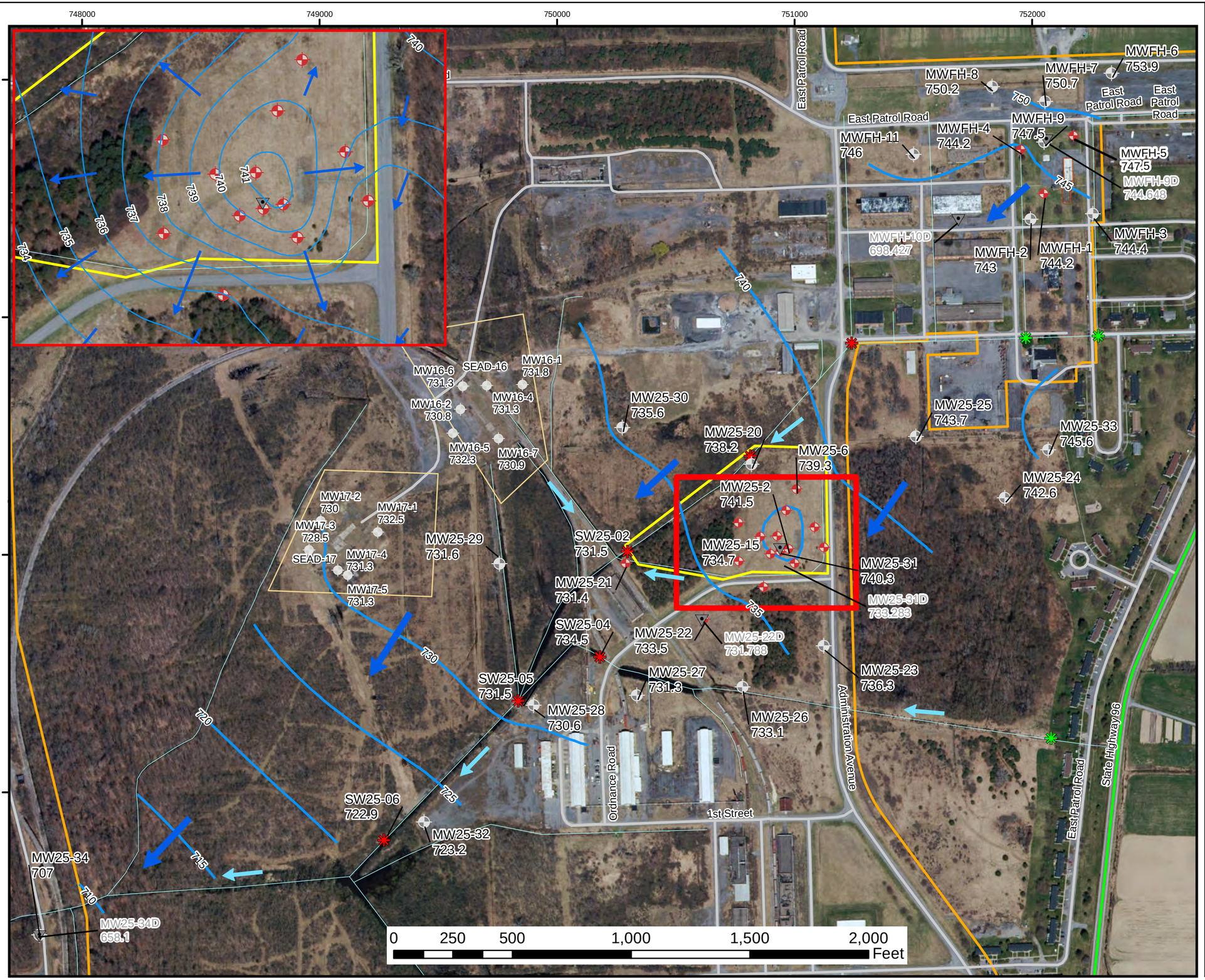
N
W E
S

SENECA ARMY DEPOT ACTIVITY
Romulus, New York

FIGURE 1
SEDA and AOC Locations

1 in = 4,000 ft | July 2021

\\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI R4 2021\Maps\SiteLocation.mxd lxh 8/4/2021



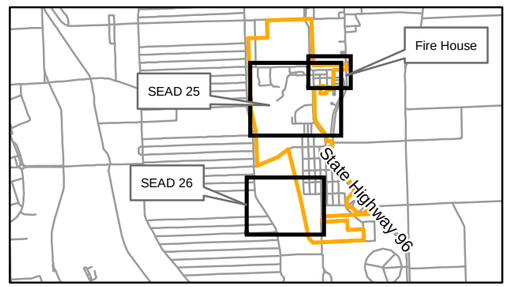
Legend

Samples (Red symbol if exceedance)

- Till / Weathered Bedrock
- Shallow Bedrock
- Stormwater (Fire House only) / Surface Water
- March 2021 Till/Weathered Bedrock GW Contour (5ft interval; 1ft interval in inset)
- SEAD-16; SEAD-17
- SEAD-25
- Stormwater Drainage
- Road
- Approximate PID Area Boundary where GW use is prohibited
- FireHouse
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Groundwater elevations gauged on 18 March 2021.
2) Groundwater elevations shown in feet.
3) Localized radial flow is present at the SEAD-25 pad area. This radial flow pattern is attributed to a bedrock high in this area. Overall groundwater flow in this figure is toward the southwest.



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 2 - GROUNDWATER CONTOURS
FIRE HOUSE AND SEAD-25, 18 MARCH 2021

1 inch = 400 feet	July 2021

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ES\ESI_R4_2021\Maps\PFAS_SEAD25_GWR4ResultsGWContours_031821_v3.mxd

748000 749000 750000 751000

993000 992000 991000

MW26-25 715.8
MW26-24 716.5
MW26-23 716.4
SW26-04 717.3
MW26-21 722.1
MW26-20 721.4
MW26-22 723.7
MW26-15 735.8
MW26-16 736.4
MW26-17 734.9
MW26-18 736
MW26-26 743.1
MW26-13 746.3
MW26-27 747.4
MW26-12 746.1
MW26-28 741.2
MW26-14 742.9
MW26-29 741.5
MW26-30 742.3
MW26-31 744.8
MW26-19 739.2
SEAD-121
SEAD-64A
SEAD-26
717
722
727
732
737
742

0 200 400 800 1,200 1,600 Feet

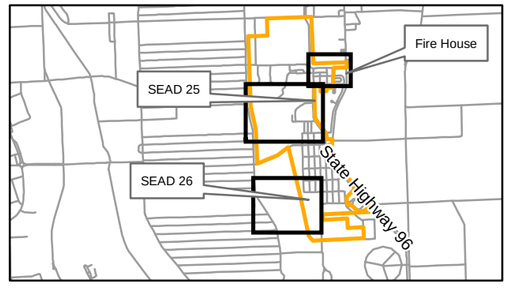
Legend

Monitoring Wells (Red symbol if exceedance)

- Till / Weathered Bedrock
- Shallow Bedrock
- March 2021 Till / Weathered Bedrock GW Contour (5ft interval)
- Surface Water Sample (Red symbol if exceedance)
- Former SEAD 26 Features
- SEAD Boundary
- Drainage Feature
- Low-lying areas
- Road
- Approximate PID Area Boundary where GW use is prohibited
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Groundwater elevations gauged on 18 March 2021.
2) Groundwater elevations shown in feet.



DATA SOURCES
-NYS Regulatory Freshwater Wetlands: CUGIR, 2020
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

N

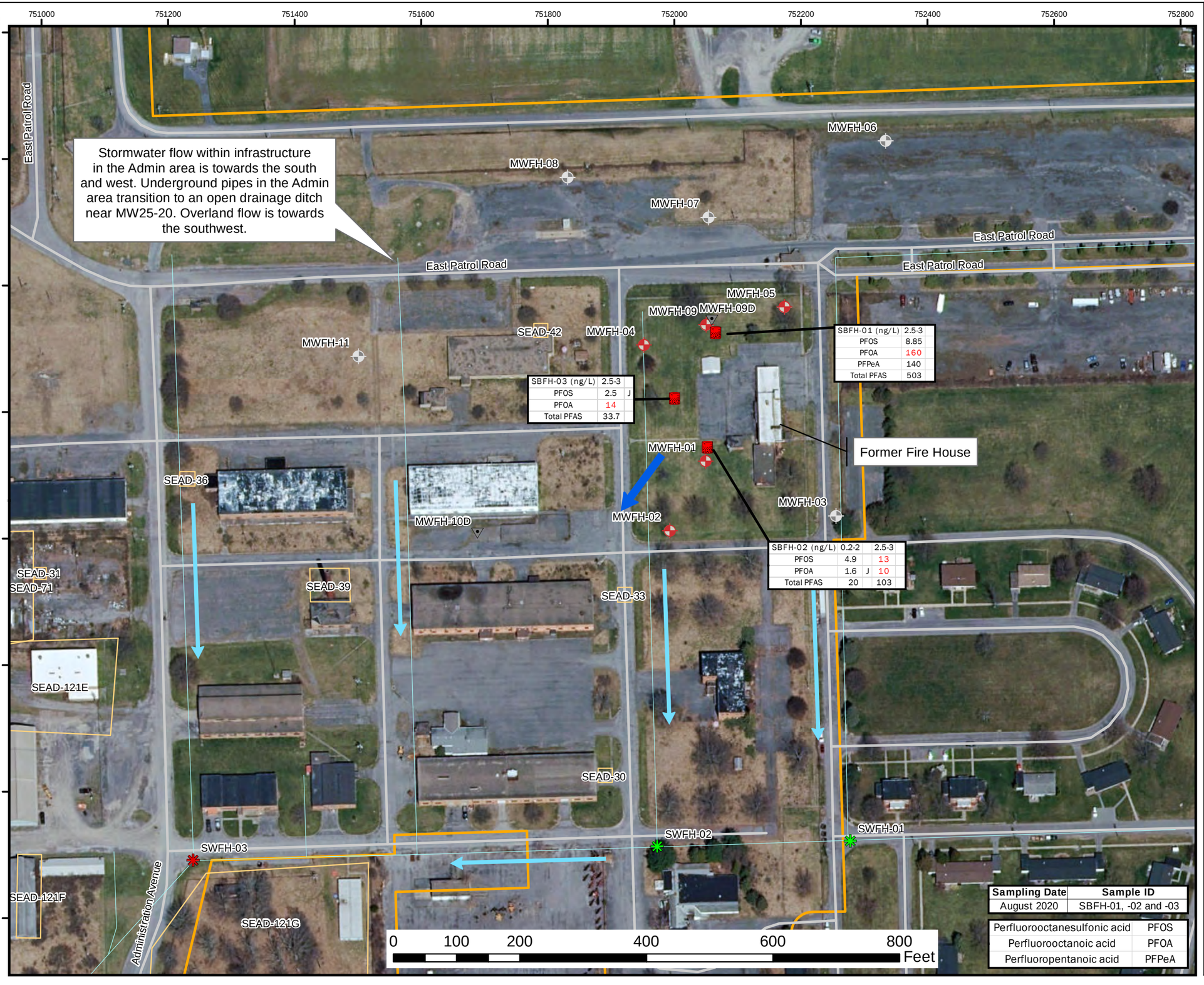
SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 3 - GROUNDWATER CONTOURS
SEAD-26, 18 MARCH 2021

1 inch = 300 feet	July 2021

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R4_2021\Maps\PFAS_SEAD26_GWR4ResultsGWContours_061621.mxd



Sampling Date	Sample ID
August 2020	SBFH-01, -02 and -03

Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
Perfluoropentanoic acid	PFPeA

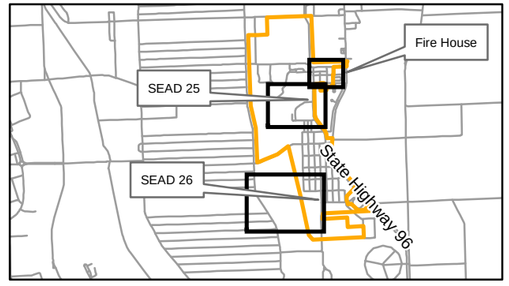
Legend

Samples (Red symbol if exceedance)

- Till / Weathered Bedrock MW
- Shallow Bedrock MW
- Stormwater Sample
- Soil Sample (depth in ft bgs)
- SEAD Boundary
- Stormwater Drainage
- Approximate PID Area Boundary where GW use is prohibited
- Former Fire House
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS red if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the southwest.
5) Soil samples were analyzed by SPLP 1312/3535 extraction.
ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated; J+ = Estimated, possibly biased high



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 4 - FIRE HOUSE
PFAS SOIL SPLP LEACHATE RESULTS

1 inch = 150 feet	July 2021

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R4_2021\Maps\PFAS_FH_SOILR3Results_072321.mxd

750800 751000 751200

998200 998000

MW25-6
MW25-17
MW25-19
MW25-18
MW25-8
MW25-3
MW25-31D
MW25-31
MW25-2
MW25-1
MW25-9
MW25-15
MW25-10
MW25-13

SB25-18 (ng/L)	0.2-2	2.5-3
PFHxS	630	480
PFOSA	165	17
PFOS	1900	2400
PFOA	520	420
Total PFAS	3,438	3,475

SB25-19 (ng/L)	0.2-2	2.5-3
PFHxS	330	620
PFHxA	26	150
PFOS	120	270
PFOA	340	1100
Total PFAS	900	2,297

SB25-17 (ng/L)	2.5-3
PFHxS	250
PFOS	920
PFOA	450
Total PFAS	1,751

Administration Avenue

Ordnance Road

0 25 50 100 150 200 Feet

Sampling Date	Sample ID
August 2020	SB25-17, -18 and -19

Perfluorohexanesulfonic acid	PFHxS
Perfluorooctanesulfonamide	PFOSA
Perfluorohexanoic acid	PFHxA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA

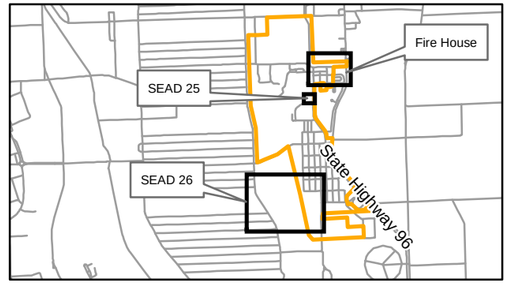
Legend

Samples (Red symbol if exceedance)

- Shallow Bedrock
- Till / Weathered Bedrock
- Soil Sample (depth in ft bgs)
- RA Excavation Extents
- SEAD Boundary
- Stormwater Drainage
- Approximate PID Area Boundary where GW use is prohibited
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS red if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is radial away from the former pad and to the southwest.
5) Soil samples were analyzed by SPLP 1312/3535 extraction.
ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated; J+ = Estimated, possibly biased high



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

N

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 5 - SEAD 25
PFAS SOIL SPLP LEACHATE RESULTS

1 inch = 50 feet	July 2021

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R3b\Maps\PFAS_SEAD25_PadArea_SOILR3Results_110920.mxd

750000 750500 751000 751500

993000 992500 992000 991500

SEAD-121

Dumpster

Fire Tower

Trailer

Drums

Armed Automobiles

SEAD-64A

SEAD-26

Former Bentonite Lined Pit

Autos

Helicopter Fuselage

Storage Area

Former Drum Storage Area

Sample not collected due to lack of water

Sample not collected due to lack of water

SB26-13 (ng/L)	2.5-3	
PFOS	2.2	J
PFOA	0.8	J
Total PFAS	78	

SB26-14 (ng/L)	0.2-2		2.5-3	
6:2 FTS	270	J+	290	
8:2 FTS	330	J+	ND	
PFHpA	210		91	
PFHxS	290		280	
PFHxA	170		150	
PFOS	1500		250	
PFOA	200		280	
PFPeA	150		140	
Total PFAS	3,308		1,567	

SB26-15 (ng/L)	2.5-3
PFOS	470
PFOA	39
Total PFAS	711

SB26-16 (ng/L)	0.2-2	2.5-3	
PFOS	15	1.9	J
PFOA	29	18	
Total PFAS	251	108	

SB26-17 (ng/L)	2.5-3
PFOS	36
PFOA	16
Total PFAS	169

0 100 200 400 600 800 Feet

Legend

Samples (Red symbol if exceedance)

- Till / Weathered Bedrock
- Shallow Bedrock

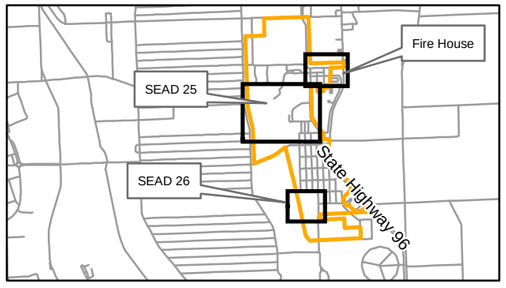
Temporary Monitoring Wells (Abandoned) (Red symbol if exceedance)

- Till / Weathered Bedrock
- Surface Water Sample (Red symbol if exceedance)
- Soil Sample (depth in ft bgs)
- RA Excavation Extents
- Former SEAD 26 Features
- SEAD Boundary
- Drainage Feature
- Approximate PID Area Boundary where GW use is prohibited
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS **red** if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the southwest.

ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated; J+ = Estimated, possibly biased high



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

Sampling Date	Sample ID
August 2020	MW26-13, -14, -15, -16 and -17

6:2 Fluorotelomer Sulfonate	6:2 FTS
8:2 Fluorotelomer Sulfonate	8:2 FTS
Perfluorobutanoic acid	PFBA
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
Perfluoropentanoic acid	PFPeA

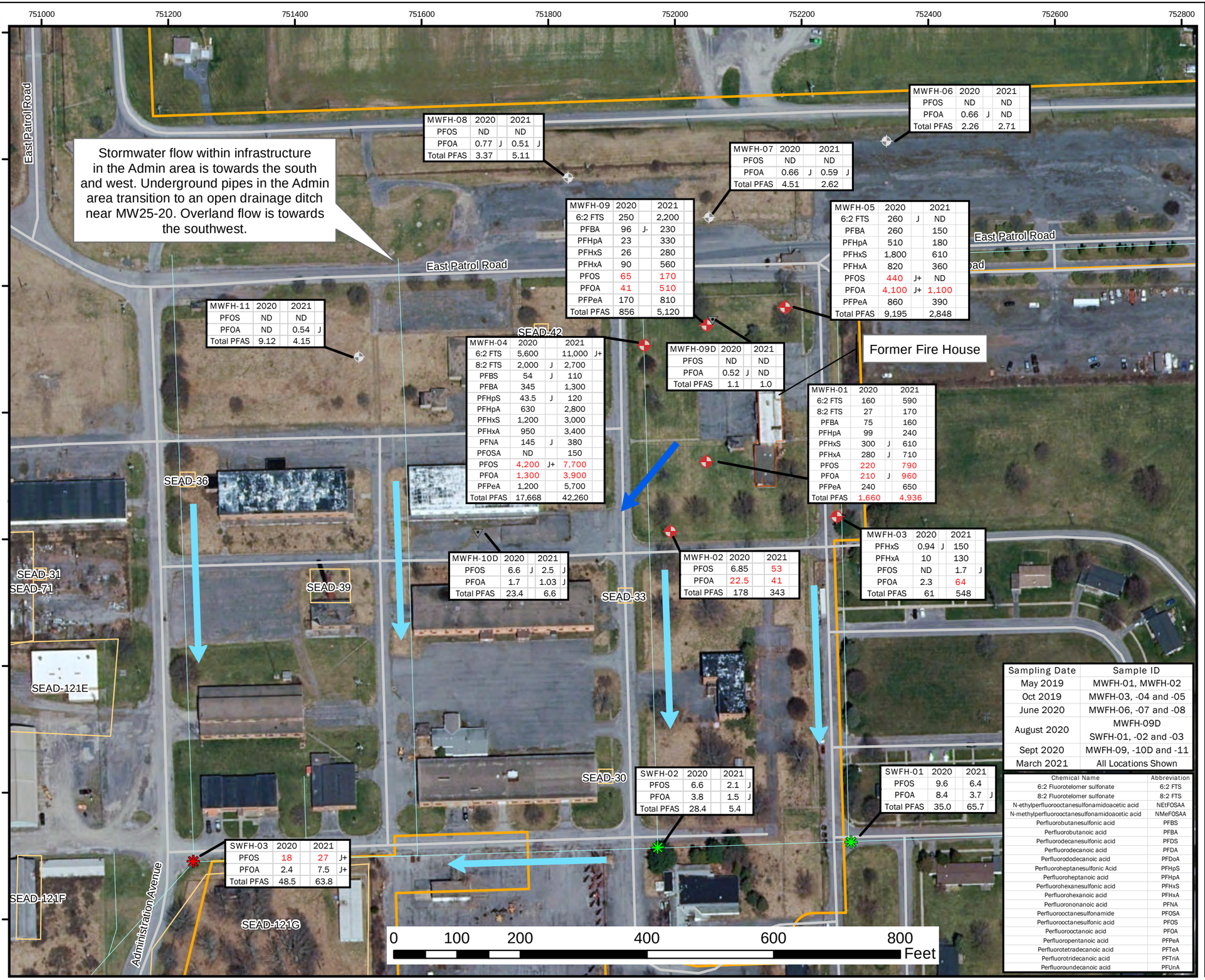
SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 6 - SEAD 26 DETAIL
PFAS SOIL SPLP LEACHATE RESULTS

1 inch = 165 feet | July 2021

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R3b\Maps\PFAS_SEAD26_PadArea_SOILR3Results_111020.mxd



MWFH-08	2020		2021	
PFOS	ND		ND	
PFOA	0.77	J	0.51	J
Total PFAS	3.37		5.11	

MWFH-06	2020		2021	
PFOS	ND		ND	
PFOA	0.66	J	ND	
Total PFAS	2.26		2.71	

MWFH-07	2020		2021	
PFOS	ND		ND	
PFOA	0.66	J	0.59	J
Total PFAS	4.51		2.62	

MWFH-09	2020		2021
6:2 FTS	250		2,200
PFBA	96	J-	230
PFHpA	23		330
PFHxS	26		280
PFHxA	90		560
PFOS	65		170
PFOA	41		510
PFPeA	170		810
Total PFAS	856		5,120

MWFH-05	2020		2021
6:2 FTS	260	J	ND
PFBA	260		150
PFHpA	510		180
PFHxS	1,800		610
PFHxA	820		360
PFOS	440	J+	ND
PFOA	4,100	J+	1,100
PFPeA	860		390
Total PFAS	9,195		2,848

MWFH-11	2020		2021	
PFOS	ND		ND	
PFOA	ND		0.54	J
Total PFAS	9.12		4.15	

MWFH-04	2020		2021	
6:2 FTS	5,600		11,000	J+
8:2 FTS	2,000	J	2,700	
PFBS	54	J	110	
PFBA	345		1,300	
PFHpS	43.5	J	120	
PFHpA	630		2,800	
PFHxS	1,200		3,000	
PFHxA	950		3,400	
PFNA	145	J	380	
PFOSA	ND		150	
PFOS	4,200	J+	7,700	
PFOA	1,300		3,900	
PFPeA	1,200		5,700	
Total PFAS	17,668		42,260	

MWFH-09D	2020		2021
PFOS	ND		ND
PFOA	0.52	J	ND
Total PFAS	1.1		1.0

MWFH-01	2020		2021
6:2 FTS	160		590
8:2 FTS	27		170
PFBA	75		160
PFHpA	99		240
PFHxS	300	J	610
PFHxA	280	J	710
PFOS	220		790
PFOA	210	J	960
PFPeA	240		650
Total PFAS	1,660		4,936

MWFH-10D	2020		2021	
PFOS	6.6	J	2.5	J
PFOA	1.7		1.03	J
Total PFAS	23.4		6.6	

MWFH-02	2020		2021
PFOS	6.85		53
PFOA	22.5		41
Total PFAS	178		343

MWFH-03	2020		2021
PFHxS	0.94	J	150
PFHxA	10		130
PFOS	ND		1.7 J
PFOA	2.3		64
Total PFAS	61		548

SWFH-02	2020		2021	
PFOS	6.6		2.1	J
PFOA	3.8		1.5	J
Total PFAS	28.4		5.4	

SWFH-01	2020		2021	
PFOS	9.6		6.4	
PFOA	8.4		3.7	J
Total PFAS	35.0		65.7	

SWFH-03	2020		2021	
PFOS	18		27	J+
PFOA	2.4		7.5	J+
Total PFAS	48.5		63.8	

Sampling Date	Sample ID
May 2019	MWFH-01, MWFH-02
Oct 2019	MWFH-03, -04 and -05
June 2020	MWFH-06, -07 and -08
August 2020	MWFH-09D SWFH-01, -02 and -03
Sept 2020	MWFH-09, -10D and -11
March 2021	All Locations Shown

Chemical Name	Abbreviation
6:2 Fluorotelomer sulfonate	6:2 FTS
8:2 Fluorotelomer sulfonate	8:2 FTS
N-ethylperfluorooctanesulfonamidoacetic acid	NEtFOSAA
N-methylperfluorooctanesulfonamidoacetic acid	NMeFOSAA
Perfluorobutanesulfonic acid	PFBS
Perfluorobutanoic acid	PFBA
Perfluorodecanesulfonic acid	PFDS
Perfluorodecanoic acid	PFDA
Perfluorododecanoic acid	PFDoA
Perfluoroheptanesulfonic Acid	PFHpS
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorononanoic acid	PFNA
Perfluorooctanesulfonamide	PFOSA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
Perfluoropentanoic acid	PFPeA
Perfluorotetradecanoic acid	PFTeA
Perfluorotridecanoic acid	PFTriA
Perfluoroundecanoic acid	PFUnA

Legend

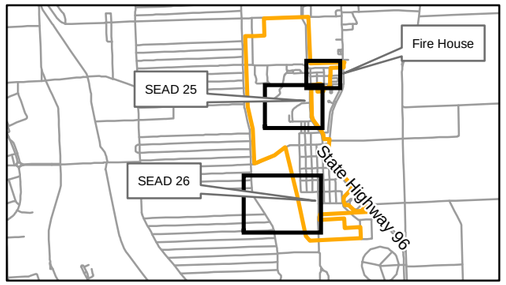
Samples (Red symbol if exceedance)

- Till / Weathered Bedrock MW
- Shallow Bedrock MW
- Stormwater Sample
- SEAD Boundary
- Stormwater Drainage
- Approximate PID Area Boundary where GW use is prohibited
- Former Fire House
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS red if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the west and southwest.

ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated
J+ = Estimated, possibly biased high
J- = Estimated, possibly biased low



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 7 - FIRE HOUSE - PFAS GROUNDWATER AND SURFACE WATER RESULTS

1 inch = 150 feet | July 2021

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ES\ESI_R4_2021\Maps\PFAS_FH_GWR4Results_061621_v2.mxd

Chemical Name	Abbreviation
6:2 Fluorotelomer sulfonate	6:2 FTS
8:2 Fluorotelomer sulfonate	8:2 FTS
N-ethylperfluorooctanesulfonamidoacetic acid	NEtFOSAA
N-methylperfluorooctanesulfonamidoacetic acid	NMeFOSAA
Perfluorobutanesulfonic acid	PFBS
Perfluorobutanoic acid	PFBA
Perfluorodecanesulfonic acid	PFDS
Perfluorodecanoic acid	PFDA
Perfluorododecanoic acid	PFDoA
Perfluoroheptanesulfonic Acid	PFHpS
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorononanoic acid	PFNA
Perfluorooctanesulfonamide	PFOSA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
Perfluoropentanoic acid	PFPeA
Perfluorotetradecanoic acid	PFTeA
Perfluorotridecanoic acid	PFTriA
Perfluoroundecanoic acid	PFUnA

748000 749000 750000 751000 752000

1000000 999000 998000 997000

East Patrol Road

SEAD-16

MW25-21	2019		2021
PFHxS	310	J	85
PFHxA	250	J	61
PFOS	140	J	6.1
PFOA	720	J	200
PFPeA	110	J	31
Total PFAS	1,680		420

MW25-30	2019	2021
PFOS	ND	ND
PFOA	ND	7.6
Total PFAS	4.7	8.3

MW25-20	2019		2021	
PFOS	ND		2.7	J
PFOA	8.15		3.8	
Total PFAS	39.4		24.8	

MW25-33	2020	2021
PFOS	ND	ND
PFOA	61	ND
Total PFAS	75.1	0.5

SW25-01	2019	2020	2021
PFOS	78	16	34
PFOA	26	7.2	30
Total PFAS	334	61	237

SW25-02	2019	2020	2021
PFHxS	130	26	74.5
PFOS	57.5	62	25.5
PFOA	115	27	102
Total PFAS	477	183	342

MW25-25	2019		2021
PFOS	ND		7.7
PFOA	0.79	J	3
Total PFAS	9.5		39.1

SEAD-17

MW25-29	2019		2021
PFOS	ND		ND
PFOA	0.53	J	ND
Total PFAS	0.90		-

Detail shown in Figure 2B

MW25-24	2019	2021
PFOS	11	ND
PFOA	3.7	ND
Total PFAS	53	1.4

SW25-04	2020		2021	
PFOS	27		2	J
PFOA	20		5	
Total PFAS	122		17	

MW25-28	2019		2021	
PFOS	8.1		1.9	J
PFOA	11		5.8	
Total PFAS	67.2		26.7	

MW25-23	2019	2021
PFOS	ND	ND
PFOA	3.35	3.1
Total PFAS	16	11

SW25-03	2021	
PFOS	1.1	J
PFOA	0.54	J
Total PFAS	5.6	

SW25-05	2020	2021
PFBS	640	ND
PFOS	51	ND
PFOA	22	ND
Total PFAS	792	-

MW25-22	2019		2021	
PFHxS	510	J	600	
PFHxA	280	J	250	
PFOS	16	J	10	J
PFOA	1,000	J+	1,300	
Total PFAS	2,023		2,364	

MW25-26	2019	2021
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	-	-

MW25-27	2019		2021
PFOS	ND		ND
PFOA	0.94	J	ND
Total PFAS	24.2		8.5

MW25-32	2020	2021
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	10.4	1.5

MW25-22D	2020	2021
PFOS	ND	ND
PFOA	6.8	1.65 J
Total PFAS	8.8	2.3

SW25-06	2020	2021
PFOS	34	5.3
PFOA	29	24
Total PFAS	161	73

MW25-34	2020		2021
PFOS	ND		ND
PFOA	0.96	J	ND
Total PFAS	0.96		-

MW25-34D	2020		2021
PFOS	ND		ND
PFOA	1.1	J	ND
Total PFAS	21.1		13.7

Ordnance

1st

Administration Avenue

East Patrol Road

0 250 500 1,000 1,500 2,000 Feet

Sampling Date	Sample ID
May 2019	MW25-20, -21, -22, -23, -24 and -25
June 2019	SW25-01 and SW25-02
October 2019	MW25-26, -27, -28, -29 and -30
August 2020	MW25-22D, -32, -33, -34, and -34D SW25-01, -02, -04, -05 and -06
March 2021	All Locations Shown

Legend

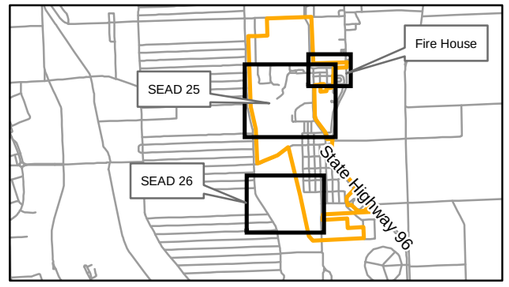
Samples (Red Symbol if Exceedance)

- Till / Weathered Bedrock MW
- Shallow Bedrock MW
- Stormwater (Fire House only) / Surface Water
- SEAD Boundary
- Stormwater Drainage
- Approximate PID Area Boundary where GW use is prohibited
- FireHouse
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS red if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the southwest.
5) If more than one sample was collected at a location, the year of collection is shown. All other locations were sampled once.

ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated
J+ = Estimated, possibly biased high
J- = Estimated, possibly biased low



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

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SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 8A - SEAD 25 - PFAS GROUNDWATER AND SURFACE WATER RESULTS

1 inch = 400 feet | June 2021

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R4_2021\Maps\PFAS_SEAD25_GWR4Results_061621.mxd

750800 751000 751200

998200 998000

MW25-06	2017		2021	
PFHxS	88		110	
PFOS	6		2.5	J
PFOA	140		66	
Total PFAS	284		206	

MW25-17	2017		2021	
PFBS	500		490	J
PFBA	–		1,600	
PFHpS	–		430	J
PFHpA	470		470	J
PFHxS	19,000		46,000	
PFHxA	1,200		1,500	
PFOS	2,600		6,100	J
PFOA	11,000		19,000	
PFPeA	–		320	J
Total PFAS	34,807		75,910	

MW25-19	2017	2020	
PFBS	840	840	J+
PFBA	–	190	J
PFHpA	400	430	J
PFHxS	13,000	17,000	
PFHxA	2,900	2,800	
PFOS	2,100	1,500	
PFOA	10,000	11,000	
PFPeA	–	560	
Total PFAS	29,293	34,320	

MW25-03	2017		2021	
PFBS	240		220	J+
PFBA	–		230	
PFDA	37		31	J+
PFHpA	220		340	
PFHxS	5,200	J	3,200	
PFHxA	1,100		1,800	
PFOS	2,300	J	960	
PFOA	7,500	J	13,000	
PFPeA	–		590	
Total PFAS	16,634		20,405	

MW25-18	2017	2021	
PFBS	76	100	
PFHxS	920	1500	
PFHxA	120	180	
PFOS	20	45	J
PFOA	550	810	
Total PFAS	1,705	2,725	

MW25-08	2017		2021	
PFBS	1,600		4,500	
PFBA	–		270	J+
PFHpS	–		1,100	
PFHpA	830		920	
PFHxS	36,000	J	50,000	J
PFHxA	5,900		5,500	
PFNA	140		190	
PFOS	8,300		12,000	
PFOA	17,000		26,000	
PFPeA	–		750	
Total PFAS	69,800		101,278	

MW25-02	2017		2021	
PFBS	1500		2,000	J+
PFBA	–		3,600	J-
PFHpS			100	J
PFHpA	3200		13,000	
PFHxS	17,000		23,000	
PFHxA	14,000		50,000	
PFNA	90		170	J
PFOS	3,900		2,800	
PFOA	89,000	J	580,000	
PFPeA	–		13,000	J-
Total PFAS	128,757		687,670	

MW25-01	2017		2021	
PFBS	380		960	J+
PFBA	–		420	J
PFHpA	350		670	
PFHxS	5,100		13,000	
PFHxA	1,900		5,700	
PFOS	490		720	J
PFOA	10,000		25,000	
PFPeA	–		1,100	
Total PFAS	18,237		47,570	

MW25-15	2017		2021	
PFBS	350		410	
PFHpA	255		210	
PFHxS	3,350		4,400	
PFHxA	890		760	
PFOS	485		410	
PFOA	6,850		9,500	
PFPeA	–		210	J+
Total PFAS	12,220		16,052	

MW25-09	2017		2021	
PFBS	670		690	
PFBA	–		140	J+
PFHpA	380		460	
PFHxS	8,900		9,500	
PFHxA	1,600		1,300	
PFOS	1,400		1,900	J-
PFOA	18,000		31,000	
PFPeA	–		470	
Total PFAS	31,007		45,558	

MW25-31	2020		2021	
PFBS	180		605	J+
PFBA	660		870	
PFHpA	1,100		2,600	
PFHxS	1,900		6,950	
PFHxA	6,100		10,350	
PFOS	420		1,850	
PFOA	65,000	J+	115,000	
PFPeA	2,200		3,600	
Total PFAS	77,636		141,825	

MW25-31D	2020	2021
PFOS	ND	ND
PFOA	ND	1.35
Total PFAS	3.5	1.8

MW25-10	2017	2021
PFBS	205	540
PFHpA	100	120
PFHxS	2,150	5,300
PFHxA	685	880
PFOS	245	490
PFOA	2,050	3,300
PFPeA	–	100
Total PFAS	5,446	10,818

MW25-13	2017		2021
PFOS	1.4	J	ND
PFOA	70		15
Total PFAS	120		36

Chemical Name	Abbreviation
6:2 Fluorotelomer sulfonate	6:2 FTS
8:2 Fluorotelomer sulfonate	8:2 FTS
N-ethylperfluorooctanesulfonamidoacetic acid	NEtFOSAA
N-methylperfluorooctanesulfonamidoacetic acid	NMeFOSAA
Perfluorobutanesulfonic acid	PFBS
Perfluorobutanoic acid	PFBA
Perfluorodecanesulfonic acid	PFDS
Perfluorodecanoic acid	PFDA
Perfluorododecanoic acid	PFDoA
Perfluoroheptanesulfonic Acid	PFHpS
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorononanoic acid	PFNA
Perfluorooctanesulfonamide	PFOSA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
Perfluoropentanoic acid	PFPeA
Perfluorotetradecanoic acid	PFTeA
Perfluorotridecanoic acid	PFTriA
Perfluoroundecanoic acid	PFUnA

Samples collected during the 2018 Site Investigation were analyzed for 14 PFAS compounds. During the ESI, samples were analyzed for 21 PFAS compounds. If an analyte in 2021 was over 100 ng/L and was not analyzed in 2018 it is denoted with '--'.

0 25 50 100 150 200 Feet

Administration Ave

Ordnance Road

Sampling Date	Sample ID
April 2017	MW25-1, -2, -3, -6, -8, -9, -10, -13, -15, 17, -18 and -19
August 2020	MW25-31 and -31D
March 2021	All Locations Shown

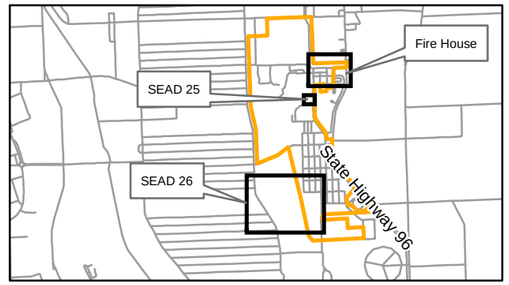
Legend

Sample (Red symbol if exceedance)

- Till / Weathered Bedrock Well
- Shallow Bedrock Well
- RA Excavation Extents
- SEAD Boundary
- Stormwater Drainage
- Approximate PID Area Boundary where GW use is prohibited
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS red if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is radial near the RA excavation area transitioning towards the southwest.
ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated
J+ = Estimated, possibly biased high
J- = Estimated, possibly biased low



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 8B - SEAD 25 DETAIL - PFAS GROUNDWATER AND SURFACE WATER RESULTS

1 inch = 50 feet | July 2021

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ES\ESI_R4_2021\Maps\PFAS_SEAD25_PadArea_GWR4Results_061621.mxd

748000 749000 750000 751000

993000 992000 991000

SW26-06	2020	2021
PFOS	5.8	5.1
PFOA	2.7	3.3
Total PFAS	43.7	46.9

MW26-25	2020	2021
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	1.58	-

SW26-05	2020	2021
PFOS	4.8	6.2
PFOA	3.2	3.9
Total PFAS	44.2	64.2

MW26-21	2020	2021
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	6.81	-

MW26-15	2019		2021	
PFOS	ND		ND	
PFOA	0.54	J	ND	
Total PFAS	0.54		0.69	

MW26-18	2019	2021	
PFOS	11	2.6	J
PFOA	18	5	
PFPeA	130	23	
Total PFAS	346	74	

MW26-20	2019	2021	
PFBA	160	23	
PFHxS	120	45	
PFHxA	245	81	
PFOS	9.75	J 3.8	J
PFOA	24.5	8.6	
PFPeA	345	84	
Total PFAS	1,004	281	

MW26-16	2019		2021	
PFBA	215		280	
PFHpA	350	J	540	
PFHxS	610	J	840	
PFHxA	655	J	800	
PFOS	785	J	690	
PFOA	330	J+	400	
PFPeA	720	J	1,000	
Total PFAS	3,795		4,715	

SW26-03	2020		2021	
PFOS	3.3	J	1.65	J
PFOA	0.93	J	2.45	
Total PFAS	9.8		18.2	

MW26-24	2020	2021
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	-	3.31

SW26-04	2020		2021
PFOS	3.65	J	7
PFOA	2.35		4.4
Total PFAS	29.7		76.2

MW26-23	2020	2021	
PFOS	ND	ND	
PFOA	11	1.5	J
PFPeA	110	10.3	
Total PFAS	317	37	

MW26-23D	2020	2021
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	7.9	10.1

MW26-32D (ng/L)	UP	DN
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	-	-

MW26-22	2020	2021
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	-	-

MW26-17	2019	2021	
PFOS	ND	1.2	J
PFOA	3.7	1.45	J
PFPeA	130	9.45	
Total PFAS	265	28	

SW26-02	2021
6:2 FTS	310
PFBA	340
PFHpA	710
PFHxS	1200
PFHxA	1100
PFOS	2100
PFOA	650
PFPeA	1400
Total PFAS	8,074

SW26-01	2021
PFHxS	100
PFOS	18
PFOA	28
Total PFAS	268

MW26-19	2020	2021	
PFOS	ND	ND	
PFOA	4.5	0.92	J
Total PFAS	26.2	14.9	

SEAD-121

SEAD-26

SEAD-64A

Chemical Name	Abbreviation
6:2 Fluorotelomer sulfonate	6:2 FTS
8:2 Fluorotelomer sulfonate	8:2 FTS
N-ethylperfluorooctanesulfonamidoacetic acid	NEtFOSAA
N-methylperfluorooctanesulfonamidoacetic acid	NMeFOSAA
Perfluorobutanesulfonic acid	PFBS
Perfluorobutanoic acid	PFBA
Perfluorodecanesulfonic acid	PFDS
Perfluorodecanoic acid	PFDA
Perfluorododecanoic acid	PFDoA
Perfluoroheptanesulfonic Acid	PFHpS
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorononanoic acid	PFNA
Perfluorooctanesulfonamide	PFOSA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
Perfluoropentanoic acid	PFPeA
Perfluorotetradecanoic acid	PFTeA
Perfluorotridecanoic acid	PFTriA
Perfluoroundecanoic acid	PFUnA

Sampling Date	Sample ID
May 2019	MW26-12, -13, -14, -15, -16 and -17
October 2019	MW26-18
Aug/Sept 2020	MW26-19, -26, -27, -28 -28D, -29, -30, -31 and -32D SW25-03, -04 and -05
March 2021	All Locations Shown

0 200 400 800 1,200 1,600 Feet

Legend

Monitoring Wells (Red symbol if exceedance)

- Till / Weathered Bedrock
- Shallow Bedrock

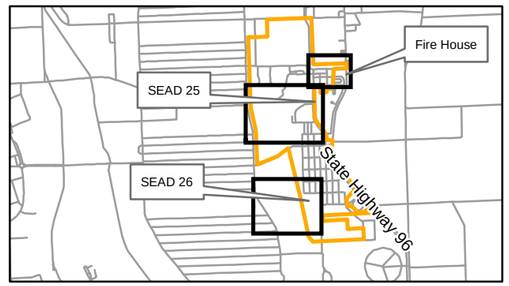
Temporary Monitoring Wells (Abandoned) (Red symbol if exceedance during SI)

- Till / Weathered Bedrock
- Surface Water Sample (Red symbol if exceedance)
- Former SEAD 26 Features
- SEAD Boundary
- Drainage Feature
- Low-lying areas
- Road
- Approximate PID Area Boundary where GW use is prohibited
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS **red** if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the west.

ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated; J+ = Estimated, possibly biased high



DATA SOURCES
-NYS Regulatory Freshwater Wetlands: CUGIR, 2020
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

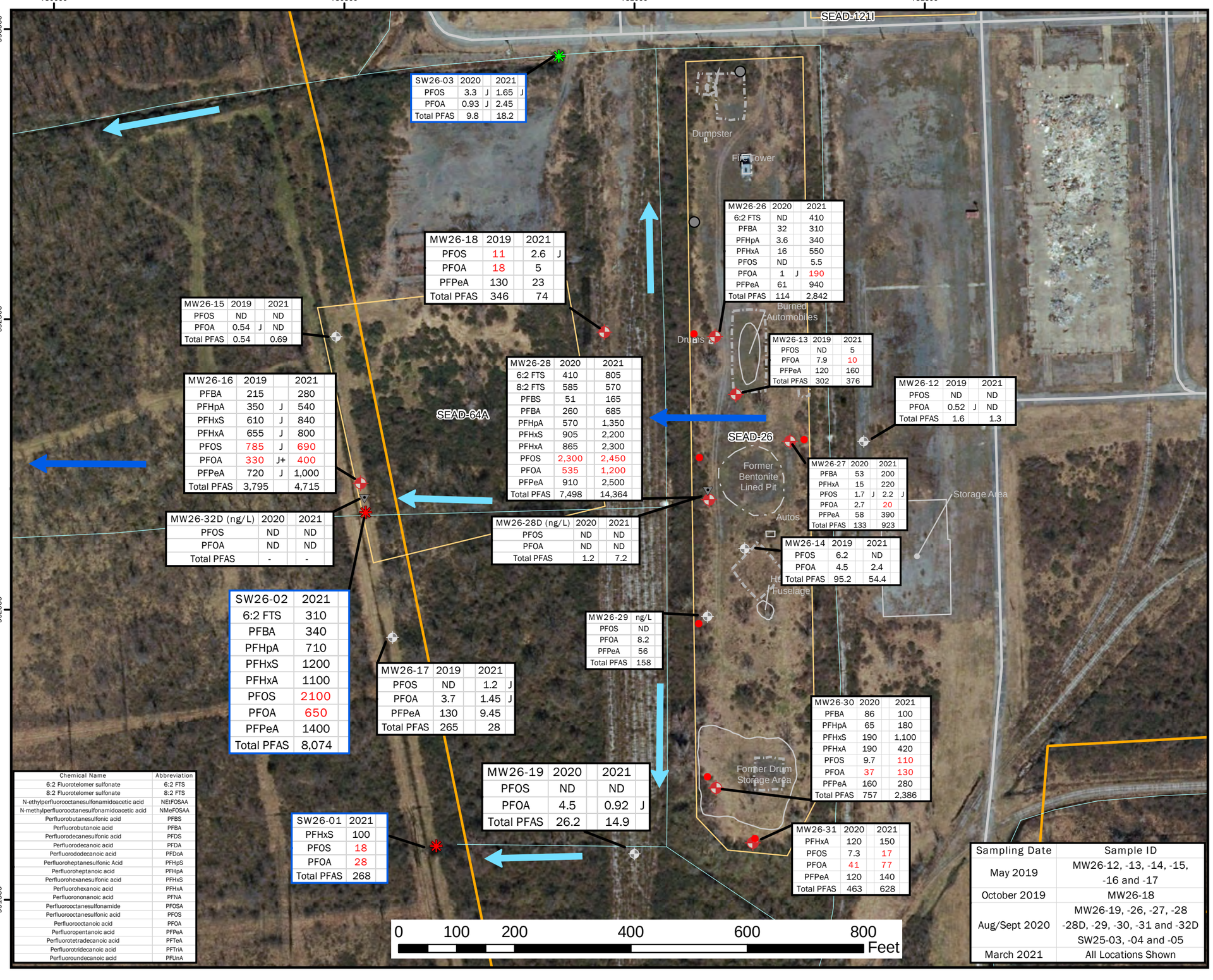
SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 9A - SEAD 26 - PFAS GROUNDWATER AND SURFACE WATER RESULTS

1 inch = 300 feet | June 2021

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R4_2021\Maps\PFAS_SEAD26_GWR4Results_061621.mxd



Legend

Monitoring Wells (Red symbol if exceedance)

- Till / Weathered Bedrock
- Shallow Bedrock

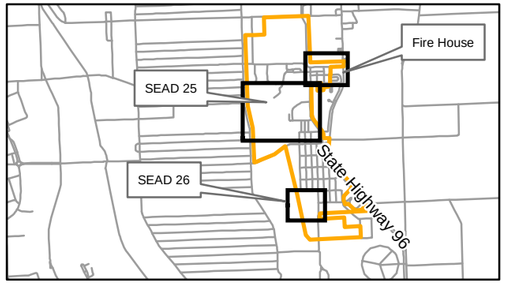
Temporary Monitoring Wells (Abandoned) (Red symbol if exceedance during SI)

- Till / Weathered Bedrock
- Surface Water Sample (Red symbol if exceedance)
- RA Excavation Extents
- Former SEAD 26 Features
- SEAD Boundary
- Drainage Feature
- Approximate PID Area Boundary where GW use is prohibited
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS **red** if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the west.

ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated; J+ = Estimated, possibly biased high



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

Sampling Date	Sample ID
May 2019	MW26-12, -13, -14, -15, -16 and -17
October 2019	MW26-18
Aug/Sept 2020	MW26-19, -26, -27, -28 -28D, -29, -30, -31 and -32D SW25-03, -04 and -05
March 2021	All Locations Shown

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 9B - SEAD 26 DETAIL - PFAS GROUNDWATER AND SURFACE WATER RESULTS

1 inch = 165 feet | June 2021

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ES\ESI_R4_2021\Maps\PFAS_SEAD26_PadArea_GWR4Results_061621.mxd

738000 740000 742000 744000 746000 748000 750000 752000 754000

1002000 1000000 998000 996000 994000 992000 990000 988000 986000 984000

N W E S

Kendaia Creek

PLANNED INDUSTRIAL / OFFICE DEVELOPMENT AND WAREHOUSING (PID) AREA

Fire House Building 103

SEAD-25

Spring Meadows Apartments

Building 334R

FARMING

SEAD-26

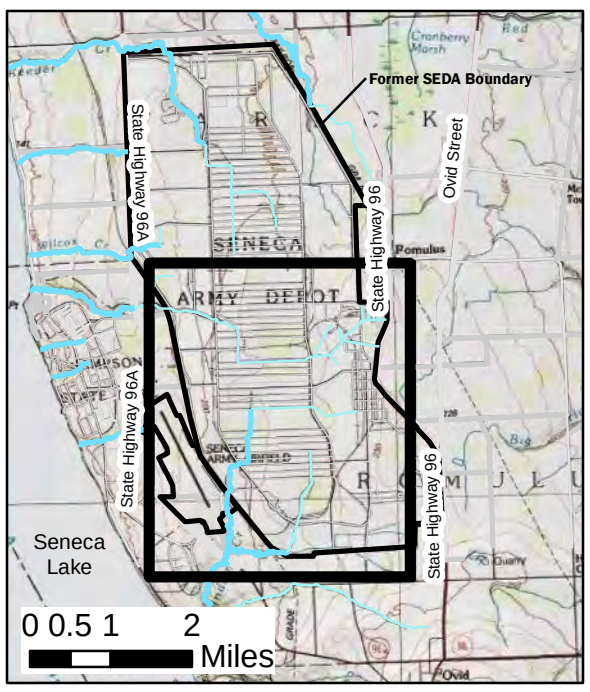
Closest Potential Build Site

FORMER AIRFIELD COUNTY FIRE TRAINING & FACTORY

PRISON AREA

Indian Creek

0 750 1,500 3,000 4,500 6,000 Feet



Legend

Samples (Red Symbol if Exceedance)

- Shallow Monitoring Well
- Surface Water

Surface Water

- Major Drainage
- Minor Drainage
- Stream
- Freshwater Emergent Wetland; Freshwater Forested/Shrub Wetland
- Freshwater Pond

- SEAD-25
- SEAD-26
- Former SEDA Boundary
- 1-mile Buffer
- Predominant Groundwater Flow Direction
- Surface Water Flow Direction

Notes:
1) Only wells and surface water samples with exceedances of the PAL are shown.

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 10 - RECEPTOR SURVEY AND PFAS EXCEEDANCES

1 inch = 1,700 feet	JULY 2021

Path: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R4_2021\Maps\PFAS_CSMv2.mxd

APPENDIX A Boring Logs and Well Construction

Figure A1

Fire House Bedrock Isocontours
(1 ft contour interval)

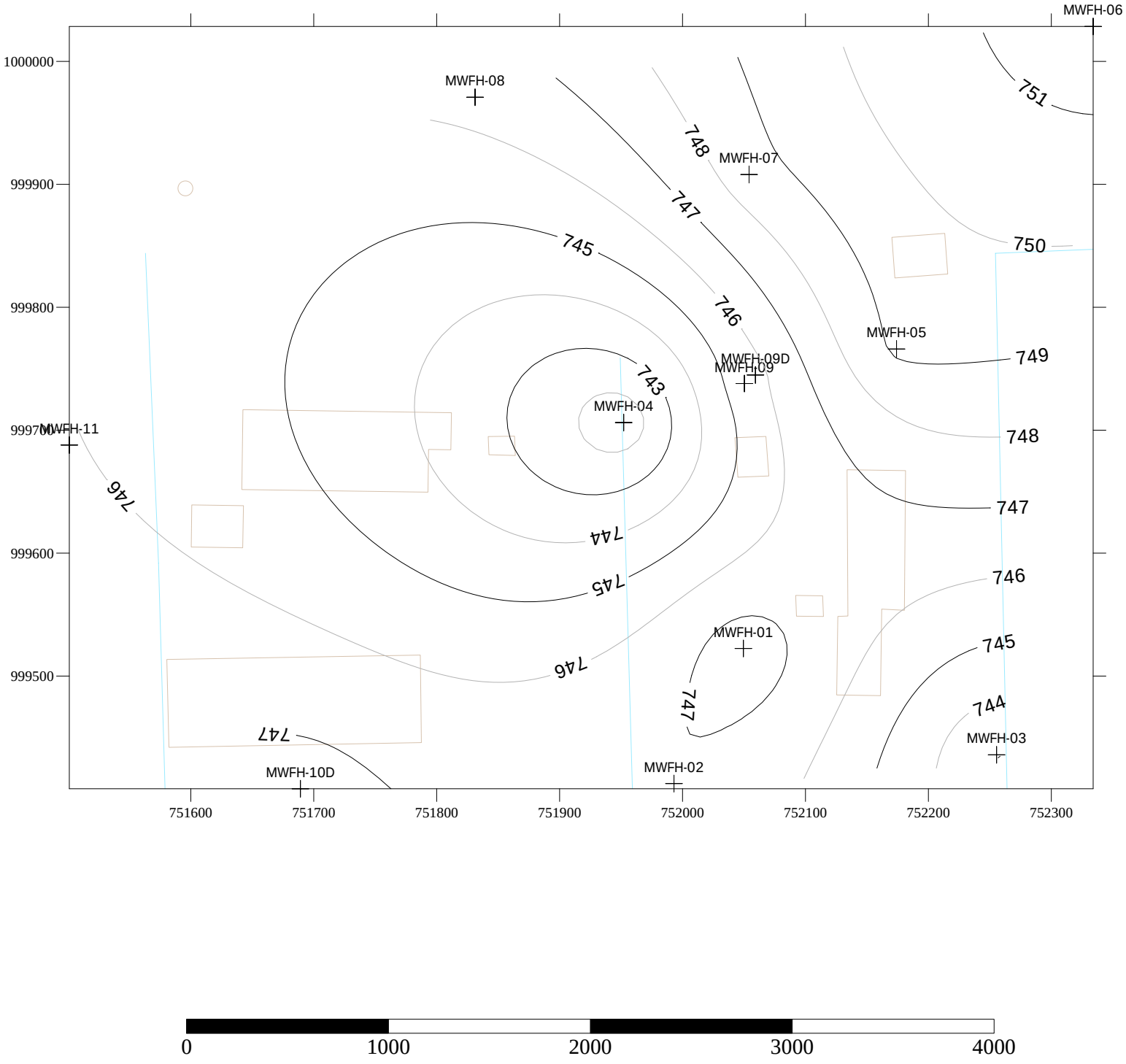


Figure A2

SEAD-25 Bedrock Isocontours
(2 ft contour interval)

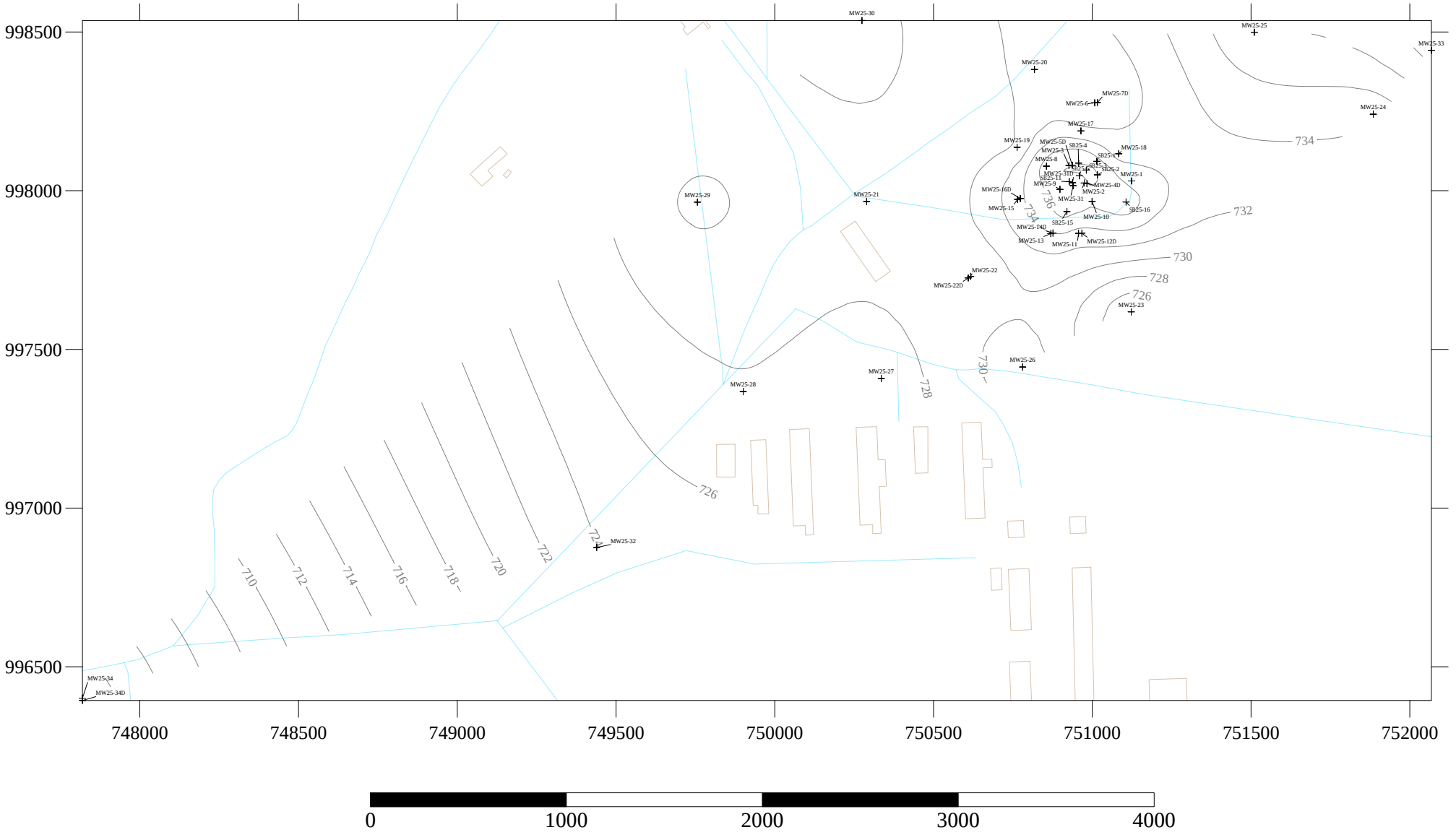
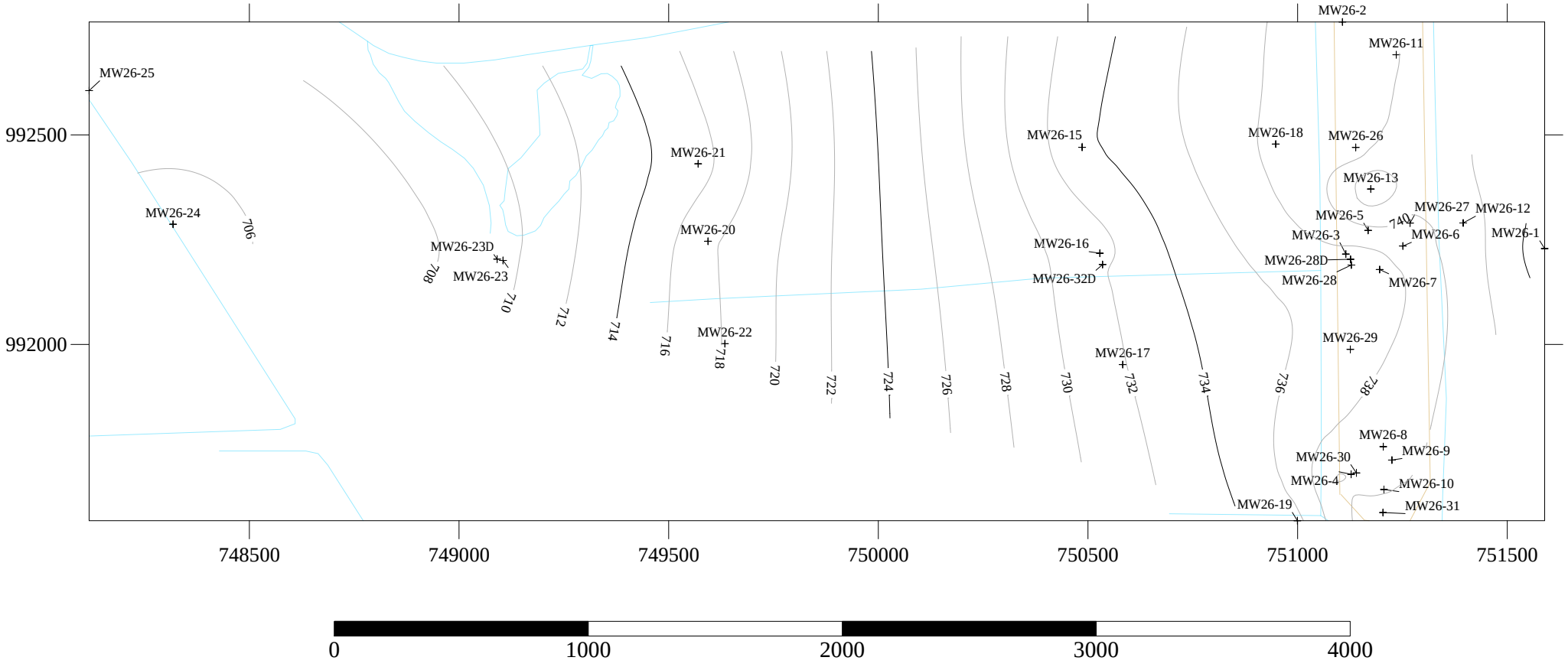


Figure A3

SEAD-26 Bedrock Isocontours
(2 ft contour interval)



Fire House Boring Logs

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** | **BORING NO.:** FA-MW-01

PROJECT: Seneca Army Depot
SWMU # (AREA): Firehouse
SOP NO.:

START DATE: 6/6/19
FINISH DATE: 6/9/19
CONTRACTOR: Parratt Wolff
DRILLER: ~~Brent~~ Mark Eves
INSPECTOR: ARE
CHECKED BY: ~~Att~~
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2'	SS	~~HMR~~	140
Air hammer 5"		5'	-	-		

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRAE 3000	PID, ppm		0.0ppm	1100	6/6/19	1100	6/6/19	60s, Sunny, 4mph→NE

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	6/6/19		
SOIL AMOUNT: (fraction of drum)	1/4		
DRUM #, LOCATION:	no drum-spread near well		

COMMENTS:

Used a Dietrich Rig, with 5" augers, Split Spoon, and an "air-hammer bit"

SAMPLES TAKEN:

SAMPLES	-
DUPLICATES	-
MS/MSD	-
MRD	-

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: FH MW 01
COMMENTS: Competent bedrock at 6', had to move well due to Powerlines and possible Septic tank		DRILLER: Brent Merk INSPECTOR: AJC DATE: 6/6/19

DEPTH (FEET)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	35	1'	2"			0.0		Moist, Light - Dark Brown, SILT, with Sand fine gravel and fine sand, wood, organics (roots + insects), no odor	ML	
4'	WOH WOH	4'	9"			0.0		Slightly moist, Light Grey - Brown - orange brown tan SILT w/ fine Gravel little fine sand, no odor	ML	
6'	50/4"		4"			0.0		Dry, Grey - Brown Hard, SILT with fine coarse Gravel, trace clay + fine Sand, no odor (Possible bedrock at 6'	ML	
8'	74		8"			0.0		Dry, Hard, Grey - Bedrock, no odor (limestone)	GP	

Competent bedrock at 6'

14.6' -

Well construction
PVC screen 15-5'
Filter Sand 15-3' (3 bags)
(Bellmere, natural sand, B)
Bentonite 3-1'
(Enviroplug, medium)

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** | **BORING NO.:** FHMW-02

PROJECT: Sunnyvale Army Depot
SWMU # (AREA): Firehouse
SOP NO.:

START DATE: 6/6/19
FINISH DATE: 6/9/19
CONTRACTOR: Parratt Wolff
DRILLER: Mark Eaves
INSPECTOR: AVC
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(in)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
AGY SS	5"	2'	2"	~~Spl~~ SS	HMR	140
Air hammer		5'	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRAE 3000	PID		0.10ppm	1100	6/6/19	1100	6/6/19	61°, 4mph, Sun

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	6/6/19		
SOIL AMOUNT: (fraction of drum)	-		
DRUM #, LOCATION:			

COMMENTS:
Used a Dietrich Rig, with 5' augers, split spoon, and air hammer/bit

SAMPLES TAKEN:

SAMPLES	-
DUPLICATES	-
MS/MSD	-
MRD	-

PAGE OF

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: FH MW-02
COMMENTS: Bedrock at 1.5', crushed, weathered (overburden) got more into bedrock (competent - weathered) 2 6"		DRILLER: Mark INSPECTOR: BRC DATE: 6/6/19

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	-	2'	40%			0.0		Moist, medium BROWN, SILT, with some clay and fine Sand, no odor	ML	
4'	50/1		>5%			NA		Dry, Grey, GRAVEL, Sand fine-medium Sand, no odor, Very Dense, Crushed bedrock	GW	
6'	50/1	.5'	15%			0.0		Top 1" Moist, Brown SILT with fine Sand + Clay Bottom 4" Dry Grey, GRAVEL, with fine Sand, no odor (Bedrock)	ML	

competent bedrock at 2.5'

very hot sample

stopping hole 1430 - leaving augers in hole moving to next loc

Well construction

PVC Screen 15-5'

Filter Sand 15-3' (~4 bags)

(Bellmore Natural Sand B)

Bentonite 3-1'

(Enviroplug, medium)

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** | **BORING NO.:** FH MW-03

PROJECT: Seneca Lake Army Depot
SWMU # (AREA): 66th Fire House
SOP NO.:

START DATE: 6/7/19
FINISH DATE: 6/9/19
CONTRACTOR: Parratt-Wolff
DRILLER: Mark Eaves
INSPECTOR: ARC
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2'	SS	[illegible]	140
Air-hammer	5"	5'	–			

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRAE 3000	PID 10.6eV		0.0ppm	0815	6/7/19	0815	6/7/19	51, [illegible] 4mph rainy

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	6/7/19		
SOIL AMOUNT : (fraction of drum)	–		
DRUM #, LOCATION:	–		

COMMENTS:
Used a Rig w/ 5" augers, split spoon and 4" air-hammer/bit" Dietrich

SAMPLES TAKEN:

SAMPLES	–
DUPLICATES	–
MS/MSD	–
MRD	–

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: FH-MW-03
COMMENTS: Bedrock 5.5' weathered shale through 10', -12', got harder + became competent		DRILLER: Mark INSPECTOR: Allison Coor DATE: 6/7/19

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'		1.7'	10"			0.0		Moist, Medium Stiff, Dark Brown SILT with trace fine + coarse gravel, no odor.	ML	
4'		4'	1.5'			0.0		Moist, medium stiff, Dark Brown, SILT with fine gravel, trace clay, trace fine sand, no odor	ML	
6'	7-32 32/4	6'	1.2'			0.0		Top 8" Moist, Soft, Dark Brown, SAA, no odor Bottom 6" Dry, Grey, Hard GRAVEL, (rock) no odor	ML GP	
8'	15-15 15-23	8'	1.8'			0.0		Top 12" Slightly moist - moist, Stiff, Br - SILT with f. gravel trace cl Bottom 6" Dry, Grey, Hard, GRAVEL, (rock) no odor	ML GP	
10'	18-50/6	10.5'	16"			0.0		Top 6" SAA Bottom 6", no odor - weathered Bottom 4" Moist-Saturated, Medium Stiff SILT with trace clay + trace gravel	GP ML	
12'	12-35/3		2"			0.0		Dry, Grey, very dense, GRAVEL (weathered rock) No odor	GP	

Well Construction

15-5' PVC Screen

15-3' Filter Sand (Bellmore, Natural Sand: 131 ~3.5b)

3-1' Bentonite (enviro-plug, medium)

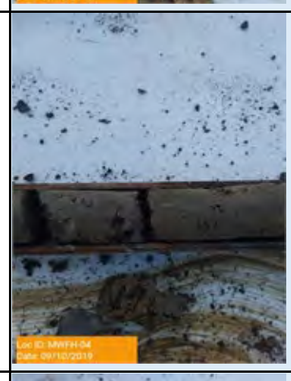
Soil Boring Log - Hollow Stem Auger

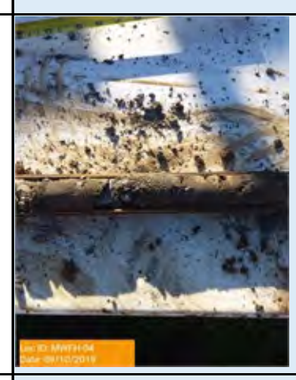
CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MWFH-04
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Truck Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	FIRE HOUSE	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7435715
		LICENSED DRILLER:	Add Name(s); Devin Ganarecki	**EASTING/LONG.:**	-76.8374613
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees
FIELD METER #1:		**FIELD METER #2:**		**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	613.51708
TYPE:	PID	**TYPE:**	Water Level	**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:		**SERIAL#:**		**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:		**MODEL:**		**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**DATE/TIME START:**	09/10/2019 07:59	**INCLINATION:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME FINISH:**	09/10/2019 07:58		
COMMENTS:		**COMMENTS:**		**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0.5 Feet
FIELD SCREENING METHOD						**BORING LOG END DEPTH:**	18.5 Feet
METER #1:	Breathing Zone	**METER #2:**	Depth Reading			**BACKFILL NOTES:**	

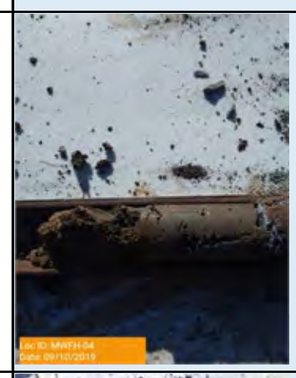
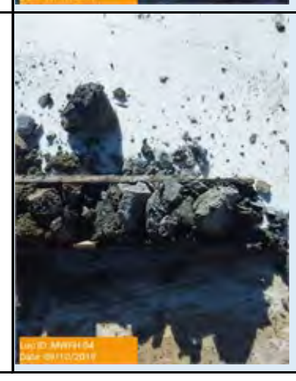
DEPTH	Feet		**FIELD METER #1**		**FIELD METER #2**		**CASING DETAILS**							
TOP	**BTM**	**SCREENING INTERVAL**	**ppm**	**H&S**	**Ft**		**DIAM In**	**LGTH Ft**	**RCVY LGTH**	**USCS Class.**	**SOIL MATRIX DESCRIPTION**	**#REF!**	**BEDROCK DEPTH/COR E LGTH**	**BORING INTERVAL NOTES**
0	0.5										Hole cleared by Hand Tools			Hole Clearing Notes: Hand Tools
0.5	1.33									ML	Dry, Brown SILT, Trace Fine Sand. FILL	Gravel intermixed		
1.33	2.5									ML	Dry, Brown SILT, Little Fine Sand, Trace Clay			
2.5	2.75									GW	Dry, Gray, Coarse GRAVEL			Pieces of shape likely placed as fill
2.75	3.5									CL	Damp, Brown - grayish CLAY, Little Coarse Gravel, Trace Fine Sand			
3.5	4									GW	Dry, Gray, Coarse GRAVEL			
4	4.5									ML	Dry, Brown SILT, Trace Fine Sand, Little Medium Gravel			
4.5	5.1									GW	Dry, Gray, Coarse GRAVEL, Some Silt			
5.1	5.7									ML	Dry, Brown SILT, Some Medium to Coarse Gravel, Trace Fine Sand			
5.7	6.5										Void Space			
6.5	7.7									CL	Damp, Brown - grayish CLAY, Some Silt and Gravel			
7.7	8.5										Void Space			
8.5	9.75									CL	Damp, Brown - grayish CLAY, Little Silt, Some Medium to Coarse Gravel			
9.75	10.5										Void Space			
10.5	11.4										Void Space			
11.4	11.8									CL	Damp, Brown - grayish CLAY, Some Medium to Coarse Gravel and Silt			
11.8	12										Dry, Gray - light, Coarse heavily weathered BEDROCK			
12	12.5										Wet, Gray - very dark, Coarse heavily weathered BEDROCK, Little Silt		12.5 Ft 5.5 Ft	

Sampling Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MWFH-04
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Truck Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	FIRE HOUSE	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7435715
		LICENSED DRILLER:	Add Name(s); Devin Ganarecki	**EASTING/LONG.:**	-76.8374613
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees
FIELD METER #1:		**FIELD METER #2:**		**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	613.51708
TYPE:	PID	**TYPE:**	Water Level	**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:		**SERIAL#:**		**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:		**MODEL:**		**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**DATE/TIME START:**	09/10/2019 07:59	**INCLINATION:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME FINISH:**	09/10/2019 07:58		
COMMENTS:		**COMMENTS:**		**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0.5 Feet
FIELD SCREENING METHOD						**BORING LOG END DEPTH:**	18.5 Feet
METER #1:	Breathing Zone	**METER #2:**	Depth Reading				

DEPTH	Feet						
TOP	**BTM**		**SOIL MATRIX DESCRIPTION**	**SAMPLE ID**	**PHOTO DESCRIPTION**	**PHOTO**	
0.5	1.33		Dry, Brown SILT, Trace Fine Sand. FILL				
1.33	2.5		Dry, Brown SILT, Little Fine Sand, Trace Clay				
2.5	2.75		Dry, Gray, Coarse GRAVEL				
2.75	3.5		Damp, Brown - grayish CLAY, Little Coarse Gravel, Trace Fine Sand				
3.5	4		Dry, Gray, Coarse GRAVEL				

4	4.5	Dry, Brown SILT, Trace Fine Sand, Little Medium Gravel			
4.5	5.1	Dry, Gray, Coarse GRAVEL, Some Silt			
5.1	5.7	Dry, Brown SILT, Some Medium to Coarse Gravel, Trace Fine Sand			
5.7	6.5	Void Space			
6.5	7.7	Damp, Brown - grayish CLAY, Some Silt and Gravel			
7.7	8.5	Void Space			
8.5	9.75	Damp, Brown - grayish CLAY, Little Silt, Some Medium to Coarse Gravel			
9.75	10.5	Void Space			

10.5	11.4	Void Space				
11.4	11.8	Damp, Brown - grayish CLAY, Some Medium to Coarse Gravel and Silt				
11.8	12	Dry, Gray - light, Coarse heavily weathered BEDROCK				
12	12.5	Wet, Gray - very dark, Coarse heavily weathered BEDROCK, Little Silt				

Soil Boring Log - Hollow Stem Auger

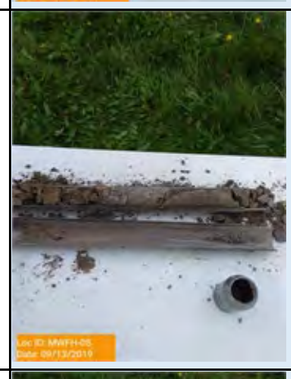
CLIENT:	USACE	**PARSONS ON-SITE:**	Richard Inclima	**BORING/WELL NO.:**	MWFH-05
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	FIRE HOUSE	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:	Richard	**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7437115
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8366188
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees
FIELD METER #1:	**FIELD METER #2:**	**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	649.60632
TYPE:	**TYPE:**	**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:	**SERIAL#:**	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:	**MODEL:**	**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	**LIMIT:**	**DATE/TIME START:**	09/13/2019 11:54	**INCLINATION:**	
H&S:	**H&S:**	**DATE/TIME FINISH:**	09/13/2019 11:54		
COMMENTS:	**COMMENTS:**	**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
		SAMPLING DEVICE TYPE:	Linear Segment	**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD				**BORING LOG END DEPTH:**	20.5 Feet
METER #1:	**METER #2:**			**BACKFILL NOTES:**	

DEPTH	Feet		**FIELD METER #1**		**FIELD METER #2**		**CASING DETAILS**							
TOP	**BTM**	**SCREENING INTERVAL**	**0**		**0**		**DIAM In**	**LGTH Ft**	**RCVY LGTH**	**USCS Class.**	**SOIL MATRIX DESCRIPTION**	**#REF!**	**BEDROCK DEPTH/COR E LGTH**	**BORING INTERVAL NOTES**
0	0										Hole cleared by Other			Hole Clearing Notes: Other
0	2									ML	Dry, Brown - light, moderately stiff, SILT, Some Clay, Little Fine to Medium Sand, Trace Fine to			Organic material throughout interval.
2	3.25										Void Space			
3.25	4									ML	Dry, Brown - Pale, moderately stiff, SILT, Some Medium to Coarse Gravel, Little Fine to Medium Sand,			
4	6									ML	Dry, Brown - Pale, moderately stiff, SILT, Little Fine to Medium Sand, Trace Fine to Medium Gravel			Weathered shale from 5.9-6'
6	6.5										Dry, Gray - Brownish, Medium to Coarse weathered BEDROCK, Some Silt		6.5 Ft 14 Ft	Refusal at approximately 6.5'.

Sampling Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Richard Inclima	**BORING/WELL NO.:**	MWFH-05
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	FIRE HOUSE	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:	Richard	**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7437115
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8366188
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees
FIELD METER #1:	**FIELD METER #2:**	**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	649.60632
TYPE:	**TYPE:**	**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:	**SERIAL#:**	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:	**MODEL:**	**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	**LIMIT:**	**DATE/TIME START:**	09/13/2019 11:54	**INCLINATION:**	
H&S:	**H&S:**	**DATE/TIME FINISH:**	09/13/2019 11:54		
COMMENTS:	**COMMENTS:**	**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
		SAMPLING DEVICE TYPE:	Linear Segment	**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD				**BORING LOG END DEPTH:**	20.5 Feet
METER #1:	**METER #2:**			**BACKFILL NOTES:**	

DEPTH	Feet				

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	2	Dry, Brown - light, moderately stiff, SILT, Some Clay, Little Fine to Medium Sand, Trace Fine to Medium Gravel			
2	3.25	Void Space			
3.25	4	Dry, Brown - Pale, moderately stiff, SILT, Some Medium to Coarse Gravel, Little Fine to Medium Sand, Trace Clay			
4	6	Dry, Brown - Pale, moderately stiff, SILT, Little Fine to Medium Sand, Trace Fine to Medium Gravel			
6	6.5	Dry, Gray - Brownish, Medium to Coarse weathered BEDROCK, Some Silt			

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MUFA06

PROJECT: Seneca Army Depot
SWMU # (AREA): Firehouse
SOP NO.:

START DATE: 6/17/20
FINISH DATE: 6/17/20
CONTRACTOR: NYG
DRILLER: S Bader
INSPECTOR: A. Cook
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4"	0-6	2x2"	SS	HHR	140/30
MW Rotary	3.25"	6-15	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
~~Horiba~~ PID	PID VL	-	0.0	1015	6/17/20	0756	6/17/20	70's Sunny
PID GX6000								

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE - NA

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
1) no water was used

SAMPLES TAKEN: NA

SAMPLES	
DUPLICATES	
MS/MSD	
MRD	

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW-FH-0616
COMMENTS: 1) Drill w/ CME 75 track-mounted rig 2) Sample w/ SS 3) Cleared to 5' for utilities		DRILLER: J. Akerman S. Bordas INSPECTOR: J. Newman A. Cook DATE: 5/14/20 - 6/17/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-6"								Asphault & limestone gravel		
6"-2'								SP Silts + clays w/ sub angular stone		
2-4'								Refusal at 4', Cleared to 5'		
5-7'	50/6	6"	6"	NA	NA	0.0	NA	5-5.3 Slightly moist, Brown, SILT with clay, and fine angular gravel, no odor or staining (Till) Hard	ML	
								5.3-5.6 Dry, Grey, WEATHERED limestone no odor or staining Hard	GM	
7-9'	50/1	0"	0"			NA		no recovery - Bedrock 6' (Competent)	NA	
								~~Wet~~ Dry through		
								Well Construction 15-5 Screen 15-3.5 Sand 3.5-1.5 Bentonite 1.5-0 Grout 5-+2.5 Riser		

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MWFH-06

PROJECT: Seneca Army Depot
LOCATION: Firehouse
PROJECT NO: 749674.0000
INSPECTOR: A. Cook
CHECKED BY:

DRILLING CONTRACTOR: NYEG
DRILLER: S. Beckam
DRILLING COMPLETED: 6/17/26
BORING DEPTH: 15'
DRILLING METHOD(S): HSA + Air rotary
BORING DIAMETER(S): 4" + 3.25"
ASSOCIATED SWMU/AOC:
POW DEPTH: 15'
INSTALLATION STARTED: 6/17/26
INSTALLATION COMPLETED: 6/17/26
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW:
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5" LENGTH: 5' TOR: -

RISER:
TOC: See note(1) TYPE: PVC DIAMETER: 2" LENGTH: 7.5'

SCREEN:
TSC: 5' TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-Y

POINT OF WELL: (SILT SUMP)
YPE: BSC: POW:

GROUT:
TG: Portland TYPE: Type I Grout/cement LENGTH: 1.5'

SEAL: TBS: 3.5-1.5 TYPE: Bent. Chips LENGTH: 2'

SAND PACK: TSP: 3.5' TYPE: Morie #0 LENGTH: 11.5'

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
1) Riser is BGS 5-0 AGS 0--2.5

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MWFH06	1

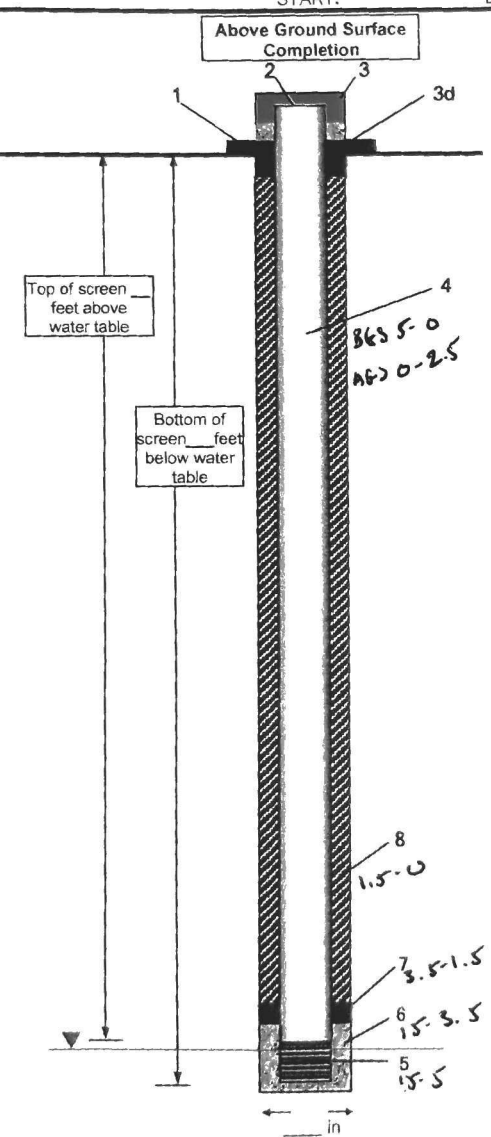
~~*Project Name*~~ Seneca Army Depot, Romulus NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT : Seneca Army Depot
DRILLING SUBCONTRACTOR : NAEG
DRILLING METHOD / EQUIPMENT: CME 75 truck mounted rig
WATER LEVEL: START: END:

LOCATION : Firehouse
DRILLER: S. Boden
HELPERS: A. Steinner
GEOLOGIST: A. Cook



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC 12"
- b) height above ground: 5'
- c) length below ground: -
- d) type / quantity of sealant: NA
- e) well centralizers

5- Well screen :
- a) type / diameter: PVC 12"
- b) slot size: 10-M
- c) length: 10'

6- Well screen filter pack :
- a) type: Morie #0
- b) length: 11.5'

7- Bentonite seal :
- a) method of placement: Pour from surface
- b) type: chips
- c) length: 2'

8- Grout :
- a) type: Type I
- b) grout mix: Grout cement
- c) method of placement: Pour from surface
- d) depth (feet bgs): 1.5

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW FH-07

PROJECT: Seneca Army Depot
SWMU # (AREA): firehouse
SOP NO.:

START DATE: 6/16/20
FINISH DATE: 6/16/20
CONTRACTOR: NYEG
DRILLER: S. Bodurm
INSPECTOR: A Cook
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4		2"x2"	~~SPLIT~~ SS	HHR	140/30
~~HSA~~ DW	3.25		-	-		

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
RKI GX-6000	PID	-	0.1	1120	6/16/20	1100	6/16/20	70s w sunny

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE - NA

DATE			
SOIL AMOUNT : (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
1) Drilled a CME 75 track based rig
2) no water added during process

SAMPLES TAKEN: - NA

SAMPLES	
DUPLICATES	
MS/MSD	
MRD	

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MWFH-07

COMMENTS:
1) using CME 75 - track mounted
2) Sample w/ SS
3) Cleared to 5' for utilities

DRILLER: J. Neumann / S. Boden
INSPECTOR: " A. Cook
DATE: 5/14/20 - 6/16/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'								[SC] Medium brown coarse w/ subangular gravel Refusal at 2' cleared to 5'		
5-7'	50/4	4"	5"	NA	NA	NA	00	5-5.2.5 Dry. Brown to grey brown SILT with fine gravel and little-trace clay, no odor or staining (TILL) hard	ML	
								5.25-5.5 Dry. Grey, WEATHERED SHALE, like silt. no odor or staining. hard	GM	
7-9	50/1							-Spoon Refused no recovery -Competent Rock @ 8' Well Construction. Screen 5-15' Sand ~~3.5-1.5~~ 1.5-3.5 Bentonite ~~1.5-3.5~~ ~~1.5-3.5~~ 3.5-1.5 Grout 0-1.5' -no water observed while drilling		

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MHPH-07

PROJECT: Seneca Army Depot
LOCATION: Firehouse
PROJECT NO: 74974.0000
INSPECTOR: A. Cook
CHECKED BY: _____

DRILLING CONTRACTOR: NYEG
DRILLER: S. Bodem
DRILLING COMPLETED: 6/16/20
BORING DEPTH: _____
DRILLING METHOD(S): HSA + air rotary
BORING DIAMETER(S): 4" + 3.25"
ASSOCIATED SWMU/AOC: _____
POW DEPTH: _____
INSTALLATION STARTED: 6/16/20
INSTALLATION COMPLETED: 6/16/20
SURFACE COMPLETION DATE: _____
COMPLETION CONTRACTOR/CREW: _____
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION: _____

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5" LENGTH: 5' TOR: —

RISER:
TOC: See note (1) TYPE: PVC DIAMETER: 2" LENGTH: ~~10'~~ 7.5'

SCREEN:
TSC: 5' TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-4

POINT OF WELL: (SILT SUMP)
YPE: _____ BSC: _____ POW: _____

GROUT:
TG: Surface TYPE: Type I grout/cement LENGTH: ~~2~~ 1.5'

SEAL: TBS: 2' TYPE: Chips LENGTH: ~~1.5~~ 2'

SAND PACK: TSP: 3.5' TYPE: Morie #0 LENGTH: 12'

SURFACE COLLAR:
TYPE: _____ RADIUS: _____ THICKNESS CENTER: _____ THICKNESS EDGE: _____

CENTRALIZER DEPTHS
DEPTH 1: _____ DEPTH 2: _____ DEPTH 3: _____ DEPTH 4: _____

COMMENTS:
1) Riser BGS: -5.0 AGS: 5.0-5 ~~at~~ cut 2.5'

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

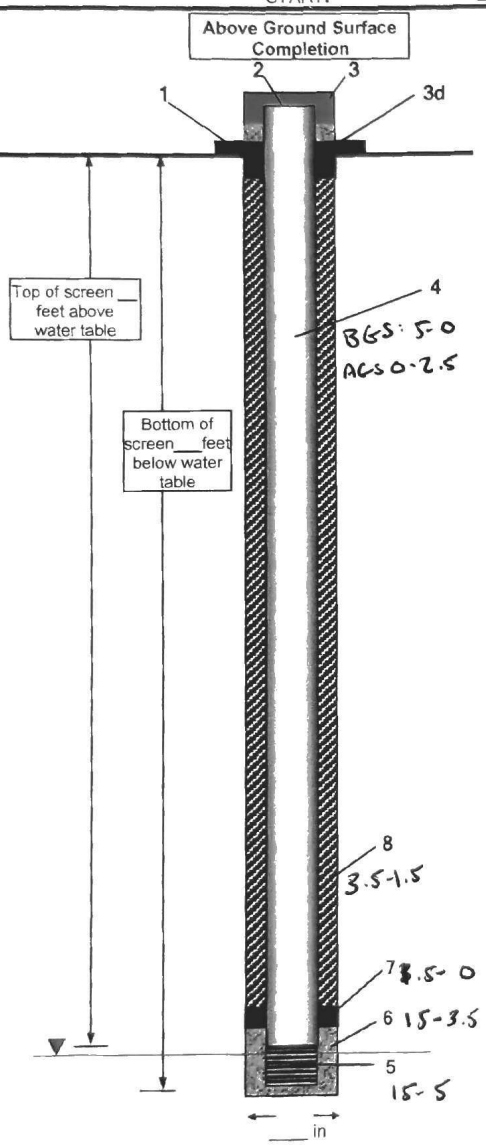
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MWFH-07	1

~~Project Name~~ Seneca Army Depot, Romulus NY
AC

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot
DRILLING SUBCONTRACTOR: NYEG
DRILLING METHOD / EQUIPMENT: HSA + air rotary
WATER LEVEL: START: END:
LOCATION: Firehouse
DRILLER: S. Baden
HELPERS: ~~A.~~ A. Jenkins
GEOLOGIST: A. Loch



DRAWING NOT TO SCALE

1- Ground elevation at well :
2- Measuring point elevation :
3- Surface completion casing :
   a) type / diameter
   b) height above ground
   c) length below ground
   d) type of sealant
   e) protective bollards
4- Well casing :
   a) type / diameter — PVC 12"
   b) height above ground — 2.5'
   c) length below ground — 5'
   d) type / quantity of sealant
   e) well centralizers — NA
5- Well screen :
   a) type / diameter — PVC 12"
   b) slot size — 10-M
   c) length — 10'
6- Well screen filter pack :
   a) type — morie #0
   b) length — ~~12'~~ 11.5'
7- Bentonite seal :
   a) method of placement — Pour from surface
   b) type — Chips
   c) length — 1.5'
8- Grout :
   a) type — Type I
   b) grout mix — grout/cement
   c) method of placement — pour surface
   d) depth (feet bgs) — 0-1.5

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW FH-606

PROJECT: Seneca Army Depot
SWMU # (AREA): Firehouse
SOP NO.:

START DATE: 6/17/20
FINISH DATE: 6/17/20
CONTRACTOR: NYEG
DRILLER: S. Bodem
INSPECTOR: A Cook
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4"	0-6.5'	2"x2'	SS	HHR	140/30
4½" Rotary	3.25"	@ 6.5-15'	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
RAE GX-6000	PID/VOC	-	0.9	0800	6/17/20	0750	6/17/20	60's Sunny

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE - NA

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
1) No water was added
2) Drilled w/ a CME-75 truck mounted rig

SAMPLES TAKEN: NA

SAMPLES	
DUPLICATES	
MS/MSD	
MRD	

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MWFH-08

COMMENTS:
1) Drill 4/CME 75 truck mounted rig
2) Sample w/ SS
3) Utl clearance to 5' for utilities

DRILLER: J. Newman/S. Bottom
INSPECTOR: " A. Code
DATE: 5/14/20 + 6/17/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-6"								Limestone gravel & asphalt		
6"-2'								[SC] Coarse brown silt		
2-4								silty clay & subangular gravel		
4-5								softer clay, cleaved		
								No odor or staining		
5-7'	16	7'	4'	NA	NA	0.0	NA	5-5.4 Dry. Grey Brown silt w/ m-c Gravel. Cobbles. no odor or staining Hard.		
	50/1	1'	1'			0.0		7-7.1 Dry. Grey WEATHERED Rock (Limestone) -trace clay		
7-9	50/1							No odor or staining. Hard		
								Refusal from 7' for Grave		
								Auger refusal at 6.5' Competent 6.5		
								Well Construction		
								15-5 Screen		
								15-3.5 Sand		
								3.5-1.5 Bentonite		
								1.5-0 Grout		
								5-.3 Casing		
								No water but less fluid ~10' with dark moist rock fragment		

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW-FH-08

PROJECT: Seneca Army Depot
LOCATION: Firehouse

PROJECT NO: 749474.8000
INSPECTOR: A. Cook
CHECKED BY:

DRILLING CONTRACTOR: NYEG
DRILLER: S. Bodem
DRILLING COMPLETED: 6/17/20
BORING DEPTH: 15'
DRILLING METHOD(S): HSA & air rotary
BORING DIAMETER(S): 4" & 3.25"
ASSOCIATED SWMU/AOC:

POW DEPTH: 15'
INSTALLATION STARTED: 6/17/20
INSTALLATION COMPLETED: 6/17/20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW:
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:
DIAMETER: 8" & 4.5" LENGTH: 5' TOR: -

RISER:
TOC: See note (1) TYPE: PVC DIAMETER: 2" LENGTH: ~7.5'

SCREEN:
TSC: 5' TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-M

POINT OF WELL: (SILT SUMP)
YPE: BSC: POW:

GROUT:
TG: Surface TYPE: ~~Bent~~ Type I cement/cem LENGTH: ± 1.5'

SEAL: TBS: 3.5-1.5' TYPE: ~~Bentonite~~ Chips LENGTH: 2"

SAND PACK: TSP: 3.5' TYPE: Morie #0 LENGTH: 11.5'

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
1) Riser BGS - 5-0 AGS 0-2.5

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

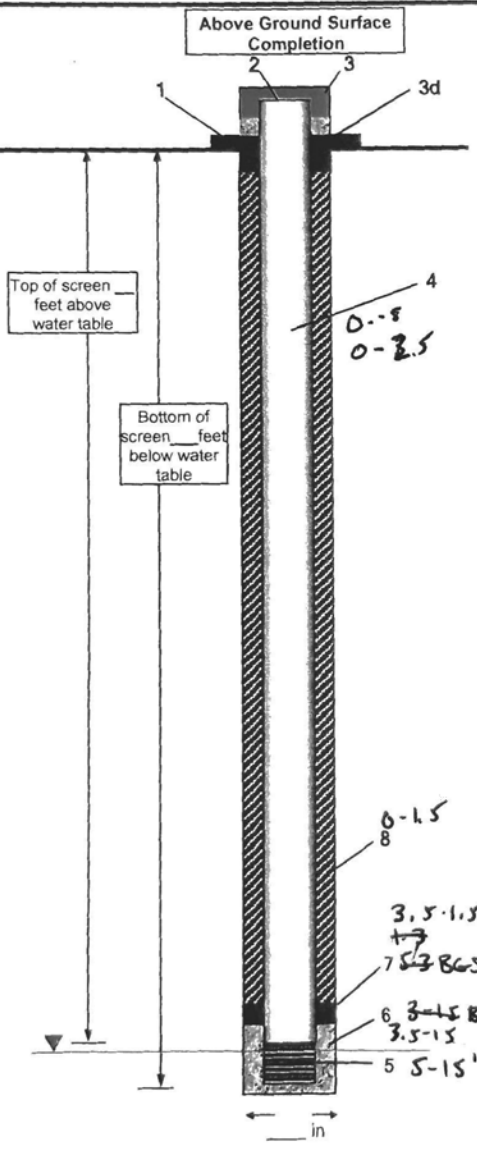
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW-FH-068	1

~~*Project Name*~~ Seneca Army Depot Romulus, NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT : Seneca Army Depot
DRILLING SUBCONTRACTOR : NVEG
DRILLING METHOD / EQUIPMENT: CME 75 truck mounted rig
WATER LEVEL: START: END:
LOCATION : Firehouse
DRILLER: S. Bo
HELPERS: ~~S. Martin~~ A. Wi
GEOLOGIST: A. Cook



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter — PVC 12"
- b) height above ground — 5'
- c) length below ground — –
- d) type / quantity of sealant
- e) well centralizers — NA

5- Well screen :
- a) type / diameter — PVC 12"
- b) slot size — 10-14
- c) length — 10'

6- Well screen filter pack :
- a) type — Morie HO
- b) length — 12' 11.5'

7- Bentonite seal :
- a) method of placement — Pour from surface
- b) type — Chips
- c) length — 2'

8- Grout :
- a) type — Type I
- b) grout mix — grout cement
- c) method of placement — pour from surface
- d) depth (feet bgs) — 3.5-1.5

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** USACE | **BORING NO.:** MW FH-095

PROJECT: Seneca Army Depot
SWMU # (AREA): Five House Ponds
SOP NO.:

START DATE: 8-8-20
FINISH DATE: 8-9-20
CONTRACTOR: NYSG / Parsons
DRILLER: J. Rauscher
INSPECTOR: E. Ashton
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA. (in)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
AH	5 7/8	—	—	—	—	—

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

AH = Air-hammer

MONITORING EQUPMENT SUMMARY - NA

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE - NA

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
- No air monitoring was performed because PFASs are not detectable by PID.
- No water used because of shallow depth.
- No water used during drilling.

SAMPLES TAKEN: - NA

SAMPLES
DUPLICATES
MS/MSD
MRD

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACE	BORING NO.: MWFH-095
COMMENTS: ~~(a) Roller bit w/ water~~ (b) Air hammer. vol (ppm)		DRILLER: J. Ranscher (MEG)
		INSPECTOR: E. Ashton (Parsons)
		DATE: 8-3-20, 8-4-20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	PENETRATION RANGE (FEET)	RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	NO.	VOC	RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0	NA	NA	NA NA	NA	NA	NA	NA	* See MWFH-095 log for lithology from 0-13' *	NA	NA
								~~- Roller bit w/ water from 0-20 bgs~~		
								- Air hammer to 20' bgs		
								- Competent rock from 9 to 20', approximately.		
								- No water use during drilling.		
								- 0-20', no water observed in cuttings. However, two wells located west / east of drilling location had wells installed to depths of 20' (18.5' bgs) and water producing in them. Wells approx. 1 mi to 1.5 mi away. water should yield in well w/ time.		
								- Installed screen from 15-20 bgs. 4-in. dia, Sch 40, PVC. 10-slot.		
20'										

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACE	WELL #: MWFH-095

PROJECT: Seneca Army Depot
LOCATION: Fire House Grounds

PROJECT NO: 746674.0800
INSPECTOR: E. Ashton (Parsons)
CHECKED BY: _____

DRILLING CONTRACTOR: MEG
DRILLER: J. Ranscher
DRILLING COMPLETED: 5-4-20
BORING DEPTH: 20'
DRILLING METHOD(S): Air-hammer
BORING DIAMETER(S): 5 7/8"
ASSOCIATED SWMU/AOC: —

POW DEPTH: 20'
INSTALLATION STARTED: 5-4-20
INSTALLATION COMPLETED: 5-4-20
SURFACE COMPLETION DATE: _____
COMPLETION CONTRACTOR/CREW: MEG
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION: _____

PROTECTIVE SURFACE CASING:
DIAMETER: 6" LENGTH: 5 TOR: —

RISER:
TOC: see note (1) TYPE: PVC DIAMETER: 4 LENGTH: 2.5 (1)

SCREEN:
TSC: 5' TYPE: PVC DIAMETER: 4" LENGTH: 15' SLOT SIZE: 10-in.

POINT OF WELL: (SILT SUMP) — NA
YPE: _____ BSC: _____ POW: _____

GROUT:
TG: Surface TYPE: Type I Cement (bent) LENGTH: 2.5'

SEAL: TBS: 2.5' TYPE: Bent chips LENGTH: 1.5'

SAND PACK: TSP: 4' TYPE: Morie #0 LENGTH: 16'

SURFACE COLLAR:
TYPE: _____ RADIUS: _____ THICKNESS CENTER: _____ THICKNESS EDGE: _____

CENTRALIZER DEPTHS - NA
DEPTH 1: _____ DEPTH 2: _____ DEPTH 3: _____ DEPTH 4: _____

COMMENTS:
(1) Riser is Dem 0-5' Spl w/ 2.5' riser above ground. Total length 15.75'.
(2) No water used during drilling.

*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

(3) No cluster sand used because of shallow depth.

CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MWFH-095	1

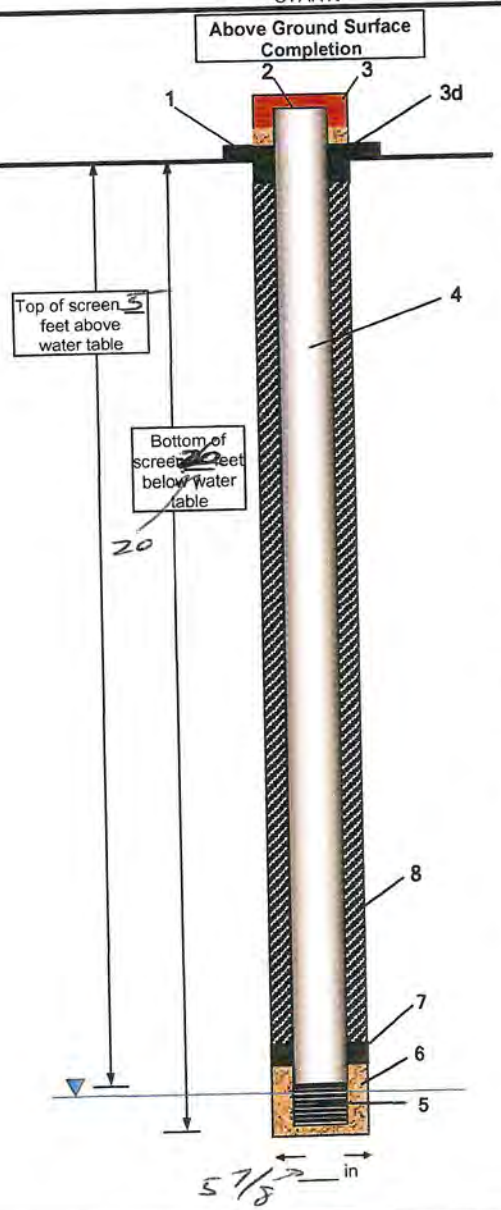
~~Project Name~~ Seneca Army Depot

Location Groundwater Monitoring Well Romulus, NY

Firehouse Grounds

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY
LOCATION: Firehouse Grounds
DRILLING SUBCONTRACTOR: MACTEC
DRILLER: J. Ranscher
DRILLING METHOD / EQUIPMENT: Mobile Drill rig; air-hammer
HELPERS: M. Truett
WATER LEVEL: START: END:
GEOLOGIST: E. Ashton



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 4"
- b) height above ground: 2.5'
- c) length below ground: 5'
- d) type / quantity of sealant: –
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC / 4"
- b) slot size: 10-in
- c) length: 15'

6- Well screen filter pack :
- a) type: Morie # 0
- b) length: 16'

7- Bentonite seal :
- a) method of placement: pour from surface
- b) type: chips
- c) length: 2.5'

8- Grout :
- a) type: Type I
- b) grout mix: cement / bent
- c) method of placement: pour from surface
- d) depth (feet bgs): 2.5

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW FH-09D

COMMENTS: (1) HSA: split spoon sampling. (0-9')
(2.) Rollerbit and split spoon sampling (9-13')
VOCs, PAHs

DRILLER: J. Newmann, J. Rensche
INSPECTOR: " E. Ashton
DATE: 5/14/20, 8-3-20

WS = weathered shale
CR = competent rock

DEPTH (Ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	NA	NA	in					[SC] Coarse silt medium brown coarse silt & subangular gravel cleared to 5'		
2-4'										
4-5'										
5'	2	NA	14	NA	NA	NA	NA	5-7' = dry, very slight brown, SILT, some f-m gravel, low plasticity, no odor or stains = (Fill)	Fill (ML)	
	7									
	8									
7'	19	NA	21	NA	NA	NA	NA	7-9' = dry, hard, brown, SILT, some f gravel and clay, trace f-sand, low plasticity, weathered chalk last inch of spoon (Fill) no odor or stains	(ML) 7-8.1' (WS 8.1-9') (CR = 9')	
	15									
	15									
	10									
9'	35									
	50/1	NA	0	NA	NA	NA	NA	9-9.1 = no recovery - competent rock at 9' bgs Roller bit to 13' bgs ~~rotate~~ into competent rock and set 6" dia drill casing and seat with grout. Spoon refusal at 9.1'		
	-									
	-									
10										
13'								TD = 13' bgs.		
								- competent rock at 9' bgs based on roller bit pressure. Large time to obtain large depth.		
								- No significant water col loss to formation during drilling		

CORE BORING REPORT

PARSONS	CLIENT: USACOE	BORING #: MWFH-91

PROJECT: Seneca Army Depot
SWMU # (AREA): Fire House Area
SOP NO.: —

DATE CORING STARTED: 8-5-20
DATE CORING COMPLETED: —
CONTRACTOR: NAEG / Parsons
DRILLER: J. Ramsdell (NAEG)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST: " "
CHECKED BY: —
DATE CHECKED: —
TOTAL FOOTAGE CORED: —
OVERBURDEN THICKNESS: —
GALLONS OF WATER USED —

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
—	—	—	—

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
AH	—	—	5 7/8"	NA

COMMENTS:
- AN-Hammered borehole

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
13'	NA	NA	NA	NA	NA	NA.	- start to drill in to competent rock at ~13' bgs. - AN-hammered, as approved by USACOE. - no water used. - 13-18' = soil cuttings dry shale. - 18'-37" = SAA. - 37'-42' = SAA. - 42.5 → minor zone of wetness - dry again at 43' - 43'-52' = Dry, soil cuttings shale. - 52'-62' = Dry, soil cuttings shale - Spoke with Todd Balanger of Parsons and it was decided to install 20' of screen (42'-62') and not to go deeper. Based on shallow wells, water should eventually yield in well.
62'							

INVESTIGATION DERIVED WASTE: NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

BEDROCK MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW FIT-090
PROJECT: Seneca Army Depot	PROJECT NO: 749674.4500	
SWMU # (AREA): Five Lease Grounds	INSPECTOR: E. Ashton (Parsons)	
SOP NO.: —	CHECKED BY:	

DRILLING CONTRACTOR:	MEG	POW DEPTH (ft):	62'
DRILLER:	J. Ranscher	INSTALLATION STARTED:	8-5-20
DRILLING COMPLETED:	8-5-20	INSTALLATION COMPLETED:	8-6-20
BORING DEPTH:	62'	SURFACE COMPLETION DATE:	
DRILLING METHOD(S):	Air-hammer	COMPLETION CONTRACTOR/CREW:	MEG
BORING DIAMETER(S):	5 7/8"	BEDROCK CONFIRMED (Y/N?)	Y

PROTECTIVE SURFACE CASING — NA

DIAMETER (ft): LENGTH (ft):

RISER

TYPE: PVC TR (ft): 0 (2)

DIAMETER(in): 4" LENGTH (ft): 44.5 (2)(3)

SURFACE COLLAR

TYPE: RADIUS (ft):

THICKNESS OF CENTER (ft): THICKNESS OF EDGE (in):

SCREEN

TYPE: PVC TSC (ft): 42

DIAMETER (in): 4 SLOT SIZE: 10-N LENGTH (ft): 20

OUTER CASING

TYPE: steel drill casing TC (ft): 0 (2)

DIAMETER (in): 6 POC (ft): 13 LENGTH (ft): ~~13~~ 13

POINT OF WELL (SILT SUMP) — NA

TYPE: BSC (ft): POW(ft):

GROUT

TYPE: cement/bent. grout TG (ft): 0 LENGTH (ft): 33

SEAL

TYPE: Bent. chips TBS (ft): 33 LENGTH (ft): 5

SAND PACK

FINE SAND TYPE: Morie #00 TSP (ft): 38 LENGTH (ft): 2

COARSE SAND TYPE: Morie #0 TSP (ft): 40 LENGTH (ft): 22

ACRONYMS

TR	Top of Riser	BSC	Bottom of Screen	TG	Top of Grout
TSC	Top of Screen	POW	Point of Well	TBS	Top of Bentonite Seal
BGD	Background	TSP	Top of Sand Pack		

COMMENTS:

(1) No water used during drilling of well. Only used for outer casing install. No water lost.

(2) Outer casing was set into competent rock at 13' bgs. Used as a protective casing.

*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

(3) Riser extends 2.5' above surface

(4) No centralizer installed well stayed plumb during installation

CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MWFH-09D	1

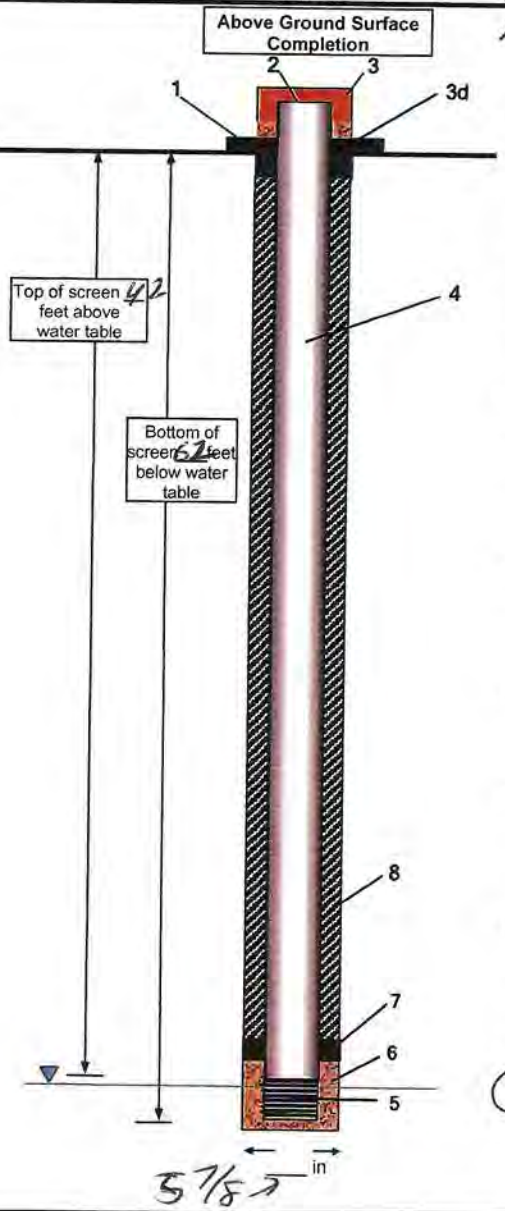
~~Project Name~~ Seneca Army Depot CD Grounds Romulus, NY

Location **Groundwater Monitoring Well**

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY — LOCATION: Fire house Grounds
DRILLING SUBCONTRACTOR: MEC — DRILLER: J. Ronschen
DRILLING METHOD / EQUIPMENT: Mobile drill rig, Roller bit w/ water for casing — HELPERS: M. Trevett
WATER LEVEL: START: END: — GEOLOGIST: E Ashton

Air hammer



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter — PVC / 4"
- b) height above ground — 2.5'
- c) length below ground — 42'
- d) type / quantity of sealant —
- e) well centralizers — NA - stinger/guide

5- Well screen :
- a) type / diameter — PVC / 4"
- b) slot size — 10-in
- c) length — 20'

6- Well screen filter pack :
- a) type — Morie #00, Morie #0
- b) length — ~~22'~~ 22', 2'

7- Bentonite seal :
- a) method of placement — Freepour from surface
- b) type — Chips
- c) length — 5'

8- Grout :
- a) type — Type I cement/bent.
- b) grout mix — Bentonite
- c) method of placement — 0-33
- d) depth (feet bgs)

(9) outer casing
- 0-13'
- grouted in place
- steel drill casing (6 in-dia)
- Type I grout
- cement/bent. mix

PAGE 1 OF 1

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACE	BORING NO.: MWFH-10D
COMMENTS: (1) HSA and split spoon from 0-2.0' (2) WS = weathered shale (3) CR = Competent Rock	DRILLER: J. Rauscha (NYEG) INSPECTOR: E. Ashton (Parsons) DATE: 8-4-20	

DEPTH (FT)	BLOWS PER 6 INCHES	PENETRATION RANGE (FEET)	RECOVERY RANGE (IN)	DEPTH INT (FEET)	NO.	VOC	RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0	–	NA	in	NA	NA	NA	NA	0'-3" = Asphalt.	Fill	
	–							3"-1' = Gravel	↓	
	3	NA	6,3					1'-2' = dry to moist, hard, brown, SILT, some f-m gravel, little f-sand, no odor or stains, weathered shale last inch, spoon refusal at 2.0' bgs. (Fill: ~~weathered~~ competent shale)	ML	~~(1'-2')~~ ~~(Shale)~~ (1'-1.11')
2	50/3		NA						WS	~~(1.11-2)~~ (1.11'-2.5')
	NA							- Rock core from 2.5' to 7.5'. Competent shale. (See core run #1 for description).	CR	(2.5'-7.5')
4								- Note: Assumed WS from 1.11 to 2.5 based on core run having competent rock at 2.5 bgs.		
5.5	↓	↓	↓	↓	↓	↓	↓	- Roller bitting to 5.5 bgs to set 6-in dia drill casing and grouting in place.		

Run #1 2.5' to 7.5'

CORE BORING REPORT

PARSONS

CLIENT: USACE

BORING #: MWFH-10D

PROJECT: Seneca Army Depot
SWMU # (AREA): Bldg 116C (South Side)
SOP NO.: —

DATE CORING STARTED: 8-4-20
DATE CORING COMPLETED: 8-6-20
CONTRACTOR: NYEG - Parsons
DRILLER: J. Rauscher (NYEG)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST: " "
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: 54.5
OVERBURDEN THICKNESS: 2.5
GALLONS OF WATER USED: —

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
NA	———		→

COMMENTS:
HF = Horizontal Fracture
VF = Vertical Fracture
AF = Angle Fracture

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
HQ	HQ	5	3 5/8"	2 1/2"

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
2.5	2.5	5	—	16.66		See info on top left	start Run #1 2.5'-7.5' bgs - various cores less than 4" in length, except two (4; 6"), trace fossils filled in w/ calcite, HF; VF present filled in w/ calcite; silt; clay, minor presence of AF (70; 95), minor iron staining present on outside and inside fractures (not consistently through core). Micro HF - VF also present w/ calcite filled. End Run #1
7.5	7.5						

INVESTIGATION DERIVED WASTE : — NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

① Shale dark gray
② Depth in feet

Run #2
7.5-12.5

CORE BORING REPORT

PARSONS	CLIENT: USACE	BORING #: MWPH-100

PROJECT: Seneca Army Depot
SWMU # (AREA): Bldg 116 (South)
SOP NO.: —

DATE CORING STARTED: 5-4-20 8-6-20
DATE CORING COMPLETED: 5-6-20
CONTRACTOR: MWEG, Parsons
DRILLER: J. Ransher (MWEG)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST: " "
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: 5 ft
OVERBURDEN THICKNESS: 2.5'
GALLONS OF WATER USED —

MONITORING

INSTRUMENT	INTERVAL	BACKGROUND	TIME
NA			

COMMENTS: See Page 1

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
HQ	HQ	5	3 5/8"	2 1/2"

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
7.5	7.5	5	-	36.66		See 12 from to the right	Start Run #2 7.5-12.5 = Various core less than 4-inches in length, 5 core > 4 inches (4"; 5"; 4"; 4.5"; 4.5") trace of fossils filled w/ calc. to. HFs ~~filled~~ in of C some small percentage filled in w/ silt & little clay), small portion percentage of VFs, & small percentage of micro HFs & VFs filled w/ calcite, w iron staining present. No AF observed End Run #2 ① Shale dark grey ② Depth in feet.
12.5	12.5						

INVESTIGATION DERIVED WASTE: NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

Run 3
12.5-17.5'

CORE BORING REPORT

PARSONS	CLIENT: USACE	BORING #: MWFH-109

PROJECT: Seneca Army Depot
SWMU # (AREA): Bldg 116 (South)
SOP NO.: —

DATE CORING STARTED: 5-4-20, 8-6-20
DATE CORING COMPLETED: 5-6-20
CONTRACTOR: MEG ; Parsons
DRILLER: J. Pancha (MEG)
INSPECTOR: E. Aslitan (Parsons)
GEOLOGIST: " "
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: 54.5'
OVERBURDEN THICKNESS: 2.5'
GALLONS OF WATER USED —

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
NA			

COMMENTS: see page 1

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
Hx	Hx	5	3 5/8"	2 1/2"

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
12.5'	12.5	5	-	26.66	-	see inform. in the report	Start Run #3 12.5'-17.5' = various cores < 4-in in length, only 3 cores > 4-in. (7"; 4.5", 4.5"), HFs : AFs (60, 55', 105', ; 115'), no major VFs observed, micro HFs: VFs w/ calcite present, no fossils observed, maj ~~4 seams~~ two major silt seams ≥ 1-inch thick present between 13' to 14.5', 12.5 to 15 most of rock cores covered w/ silt & clay sed; decrease w/ depth., no iron staining observed End of Run #3 (1) Shale dark gray (2) Depth in feet
17.5'	17.5						

INVESTIGATION DERIVED WASTE : - NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #,			
LOCATION			

Run #4
17.5' - 22.5'

CORE BORING REPORT

PARSONS	CLIENT: USACOE	BORING #: MWFH-100

PROJECT: ~~USA~~ Seneca Army Depot
SWMU # (AREA): Bldg 116 (South)
SOP NO.: —

DATE CORING STARTED: 8-4-20 8-6-20
DATE CORING COMPLETED: 8-6-20
CONTRACTOR: NYSG i ~~Parsons~~ Parsons
DRILLER: J. Rancher (NYSEG)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST:
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: 54.5
OVERBURDEN THICKNESS: 2.5
GALLONS OF WATER USED

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
—	—	—	—

COMMENTS: See page 1

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
Ha	Ha	5	3 5/8"	2 1/2"

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,INT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
17.5'	17.5	5	-	72.33		See from to right	Start Run #4 17.5'-18' = shale, micro HFs; v/s wl. calcite. 18-18.1" = shale c 1-inch thick w/ HFs (90°) at upper & lower boundary 18.1"-18.10" = SAA 17.5-18 - shale 18.10"-18.10.1" = HF (90°) 18.10.1"-19.2" ⇒ SAA 17.5-18' shale 19.2"-19.2".1" = HF (90°) 19.2".1 → 19.6" ⇒ SAA 17.5-18-shale 19.6-19.6.1 = HF (90°) 19.6".1" ⇒ 19.8.0" = SAA 17.5-18 - shale 19.8.0 → 19.8.1" = HF (90°) 19.8.1" → 20' = shale, SAA 17.5-18' 20-20.1" = HF (90°) 20.1" → 20.6' = shale, SAA -17.5-18 20.6" ⇒ 20.61" = HF (90°) 20.6.1" = 22.5' = shale, SAA 17.5-18'
22.5'	22.5						

End Run #4

INVESTIGATION DERIVED WASTE: — NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

(1) Shale dark gray
(2) Depth in feet & inches
(3) N seams of silt & clay
(4) mm size of fossils w/ calcite

Run #5
22.5-27.5'

CORE BORING REPORT

PARSONS	CLIENT: USACOE	BORING #: MW FH-100

PROJECT: Seneca Army Depot
SWMU # (AREA): Bldg 116 (South)
SOP NO.:

DATE CORING STARTED: 8-4-20 8-6-20
DATE CORING COMPLETED: 8-6-20
CONTRACTOR: MYEG / Parsons
DRILLER: J. Ranschka (MYEG)
INSPECTOR: E. A. Slotin (Parsons)
GEOLOGIST: " "
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: 54.5
OVERBURDEN THICKNESS: 2.5
GALLONS OF WATER USED

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
—	—	—	—

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
HQ	HQ	5	3 5/8"	2 1/2"

COMMENTS: See page 1

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,INT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
22.5	22.5	5	—	71.6%	—	5° Intersects the right	Start Run #5 22.5-23.5' = Shale, fossiliferous (calcite, micro HF; VFS w/ calcite. 23.5-23.5.1" = HF (90°) 23.5.1" → 23.10 = SAA 22.5-23.5' - shale, 23.10-23.10.1 = HF (90°) 23.10.1-24.3' = SAA 22.5-23.5' - shale 24.3-24.3.1" = HF (90°) 24.3.1 → 25.1 = SAA 22.5-23.5' - shale 25.1 → 25.1.1 = HF (90°) 25.1.1 → 25.7' = SAA 22.5-23.5' - shale 25.7-25.7.1 = HF (90°) 25.7.1 → 25.8' = SAA - 22.5-27.5' - shale 25.8' → 26.10 = Zone of crushed/weathered shale, recovered as 4-inches, with exception of 5-inches, some % of silt/clay in HFs. 5-inch core has AF not broken all way through core. (105' → 110') 26.10-26.1.1" = HF (90°) 26.1.1 → 27.5' = Core of shale w/ AF (55°) fill w/ minor % of silt/clay.
27.5	27.5						

INVESTIGATION DERIVED WASTE: NA		End Run #5	
DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

(1) Shale dark grey
(2) Bottom foot and inches

Run #6
27.5 - 32.5

CORE BORING REPORT

PARSONS	CLIENT: USACOE	BORING #: MWFH-10D

PROJECT: Seneca Army Depot
SWMU # (AREA): Bldg 116 (South)
SOP NO.: —

DATE CORING STARTED: 5-4-20, 5-6-20
DATE CORING COMPLETED: 5-6-20
CONTRACTOR: MACTEC: Parsons
DRILLER: T. Rauscher (MACTEC)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST: —
CHECKED BY: —
DATE CHECKED: —
TOTAL FOOTAGE CORED: 54.5
OVERBURDEN THICKNESS: 25
GALLONS OF WATER USED —

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
—	—	—	—

COMMENTS: See Page 1

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
HQ	HQ	5	3 7/8"	2 1/2"

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
27.5	27.5	5	—	30.0		see written description	Start Run #6 27.5 - 32.5 = various cores (4-inch), with the exception of two cores (14"; 4"), various HFs; VFs present, fossils present w/ calcite fill, ~~silty~~ silt & clay present in small percentage of beds; micro HFs; VFs present on core w/ calcite; sections of weathered / crumbled shale present throughout run. no AFs observed (significant ones) End Run #6 ① shale dark gray ② depth in feet.
32.5	32.5						

INVESTIGATION DERIVED WASTE: — NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

Run #7
32.5-37.5'

CORE BORING REPORT

PARSONS | CLIENT: USACE | BORING #: MW19A-100

PROJECT: Seneca Army Depot
SWMU # (AREA): Bldg 116 (South)
SOP NO.:

DATE CORING STARTED: 5-4-20, 5-6-20
DATE CORING COMPLETED: 5-6-20
CONTRACTOR: MYEG / Parsons
DRILLER: J. Pawsha (MYEG)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST:
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: 54.5
OVERBURDEN THICKNESS: 2.5
GALLONS OF WATER USED

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
—	—	—	—

COMMENTS: See page 1

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
HQ	HQ	5	3 7/8"	2 1/2"

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,INT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
32.5	32.5	NA	—	56.66		See within table report	Run Start CR #7 32.5 - 37.5' = Various core 4-inch w/ exception of 4 cores (5", 11", 7", 5") Various HFs w/ silt & clay in seams Silt & clay on exit side of core, else No significant VFs present; no AFs observed, little to no fossils w/ calcite, no iron staining present, various micro Aff. VFs w/ calcite present. End Run #7 ① Shale dark gry ② Depths in feet
37.5	37.5						

INVESTIGATION DERIVED WASTE: — NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

Run #8

37.5-42.5

CORE BORING REPORT

PARSONS | CLIENT: USACE | BORING #: MWFH-100

PROJECT: Seneca Army Depot
SWMU # (AREA): Bldg 116 (South)
SOP NO.:

DATE CORING STARTED: 8-4-20, 8-6-20
DATE CORING COMPLETED: 8-6-20
CONTRACTOR: MACTEC / Parsons
DRILLER: J. Ramsden (MACTEC)
INSPECTOR: R. Ashton (Parsons)
GEOLOGIST: CL
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: 54.5
OVERBURDEN THICKNESS: 2.5
GALLONS OF WATER USED: —

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
—	—	—	—

COMMENTS: See page 1

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
HQ	HQ	5	3 7/8"	2 1/2"

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
37.5	37.5	5	—	100		see inform to the right	Start Run #8 37.5-38.5 = shale, fossil w/ calcite, minor silt/clay @ at top boundary (HF=90°), micro HF's VFS w/ calcite 38.5'-38.5.1' = ~~Mined Out~~ : HF = (90°) 38.51-40.9' = shale, SAA 37.5-38.5, except w silt/clay present and void w shale w/ calcite filled in bottom of void. 40.9-40.9.1 = HF (90°) 40.9.1-41.0 = shale, w/ VF, no fossils observed, no silt or clay observed, micro HF's VFS present w/ calcite 41.0-41.0.1 = HF (90°) 41.0.1-42 = shale w/ VF present, minor silt/clay present, micro HF's VFS w/ calcite, no fossils observed. ~~42-42.3~~
42.5	42.5						42-42.0.1 = HF (90°) 42.0.1-42.3 = shale, minor silt/clay present, micro HF's VFS w/ calcite, no fossils observed. 42.3-42.5 = shale w/ natural mix HF

INVESTIGATION DERIVED WASTE: NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

(1) Shale dark ~~gray~~ grey

(2) Depths in feet & inches

End Run #8

Run #9
42.5-47.5'

CORE BORING REPORT

PARSONS	CLIENT: USACE	BORING #: MW FH-100

PROJECT: Seneca Army Dept of
SWMU # (AREA): Bldg 116 (South)
SOP NO.:

DATE CORING STARTED: 5-4-20 5-6-20
DATE CORING COMPLETED: 5-6-20
CONTRACTOR: MACTEC; Parsons
DRILLER: J. Rauscher (MACTEC)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST:
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: 54.5
OVERBURDEN THICKNESS: 2.5
GALLONS OF WATER USED: -

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
—	—	—	—

COMMENTS: See Page 1

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
HQ	HQ	5	3 7/8"	2 1/2"

DEPTH FEET	RUN # / RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,INT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
42.5	42.5	5	—	96.66	—	See inform for the right	Start Run #9
							42.5 - 44.7' = Shale, micro VF soils w/ calcite, no fossils.
							44.7 - 44.71 = HF (90°)
							44.71 - 44.9 = SAA - 42.5 - 44.7' - shale
							44.9 - 44.91 = HF (90°)
							44.91 - 45.9' = SAA - 42.5 - 44.7' - shale
							~~45.9~~
							45.9 - 45.91 = HF (90°)
							45.91 - 47.5' = SAA - 42.5 - 44.7, ~ of opt mixer & ~ of fossils w/ calcite.
							End Run #9
							① Shale dark grey
							② Depth in feet : inches
47.5	47.5						

INVESTIGATION DERIVED WASTE : NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

Run #10
47.5 - 52.5

CORE BORING REPORT

PARSONS	CLIENT: USACE	BORING #: MWPH - 100

PROJECT: Seneca Army Depot
SWMU # (AREA): Bldg 116 (South)
SOP NO.:

DATE CORING STARTED: 8-4-20 5-6-20
DATE CORING COMPLETED: 8-6-20
CONTRACTOR: NYEG - Parsons
DRILLER: J. Rancka (NYEG)
INSPECTOR: E Ashton (Parsons)
GEOLOGIST:
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: 5 4.5'
OVERBURDEN THICKNESS: 2.5'
GALLONS OF WATER USED

MONITORING

INSTRUMENT	INTERVAL	BACKGROUND	TIME
—	—	—	—

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
HQ	HQ	5	3 7/8"	2 1/2"

COMMENTS: See page 1

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
47.5	47.5	5	—	41.66	—	See information to the right.	Start Run #10 47.5 - 52.1 = shale, fossils w/ (calcite, micro VFs; HFs w/ calcite. solid core. 52.1 - 52.1 = HF (90°) 52.1.1 - 52.5 = SAA 47.5 - 52.1, shale, VF at end of core End Run #10 ① shale dark gray. ② Depth in feet : inches
52.5	52.5						

INVESTIGATION DERIVED WASTE : NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

Run #11
52.5-57.5'

CORE BORING REPORT

PARSONS	CLIENT: USACE	BORING #: MW88FH-1CM

PROJECT: Seneca Army Dept
SWMU # (AREA): Bldg 116 (South)
SOP NO.:

DATE CORING STARTED: 5-4-20, 5-6-20
DATE CORING COMPLETED: 5-6-20
CONTRACTOR: MEG, Parsons
DRILLER: J. Ranscha (MEG)
INSPECTOR.: E Ashton C Parsons
GEOLOGIST: C. F
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: 54.5
OVERBURDEN THICKNESS: 2.5
GALLONS OF WATER USED: —

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
—	—	—	—

COMMENTS: See Pg 1

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
Itk	Itk	5	3 7/8"	2 1/2"

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
52.5	52.5	5	—	100		See inform to right	Start Run #11 52.5-55.10" = shale, minor fossils w/ calcite, micro VFs ? HFs w/ calcite AF at upper boundary (approx 55°) minor silt:clay on outside of core 55.10"-55.10.1" = HF (90°) 55.10.1"-57.5 = SAA 52.5-55.10" shale, except no silt:clay present End Run #11 ① shale dark gray ② Depth in feet:inches
57.5	57.5						

INVESTIGATION DERIVED WASTE: NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

BEDROCK MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW FH-10D
PROJECT: Seneca Army Depot	PROJECT NO: 749674.08.00	
SWMU # (AREA): Bldg 116 (South)	INSPECTOR: E. Ashton (Parsons)	
SOP NO.: —	CHECKED BY:	

DRILLING CONTRACTOR:	MEG	POW DEPTH (ft):	57
DRILLER:	J. Ramscher	INSTALLATION STARTED:	8-4-20
DRILLING COMPLETED:	8-4-20 - 8-6-20	INSTALLATION COMPLETED:	8-7-20
BORING DEPTH:	57.5	SURFACE COMPLETION DATE:	
DRILLING METHOD(S):	Core & air-hammer	COMPLETION CONTRACTOR/CREW:	MEG
BORING DIAMETER(S):	5 7/8"	BEDROCK CONFIRMED (Y/N?)	Y

PROTECTIVE SURFACE CASING — NA

DIAMETER (ft): _____ LENGTH (ft): _____

RISER

TYPE: PVC TR (ft): 0

DIAMETER(in): 4 LENGTH (ft): 37

SURFACE COLLAR

TYPE: _____ RADIUS (ft): _____

THICKNESS OF CENTER (ft): _____ THICKNESS OF EDGE (in): _____

SCREEN

TYPE: PVC TSC (ft): 37

DIAMETER (in): 4 SLOT SIZE: 10-in LENGTH (ft): 20

OUTER CASING

TYPE: steel drill casing TC (ft): 0

DIAMETER (in): 6 POC (ft): 5.5 LENGTH (ft): 5.5

POINT OF WELL (SILT SUMP) — NA

TYPE: _____ BSC (ft): _____ POW(ft): _____

GROUT

TYPE: cement/bent. grout TG (ft): 0 LENGTH (ft): 28

SEAL

TYPE: Bent. chips TBS (ft): 28 LENGTH (ft): 5

SAND PACK

FINE SAND TYPE: Morie #00 TSP (ft): 33 LENGTH (ft): 2

COARSE SAND TYPE: Morie #0 TSP (ft): 35 LENGTH (ft): 22

ACRONYMS

TR	Top of Riser	BSC	Bottom of Screen	TG	Top of Grout
TSC	Top of Screen	POW	Point of Well	TBS	Top of Bentonite Seal
BGD	Background	TSP	Top of Sand Pack		

COMMENTS:

(1) Lost approx. 50 gals of water to formation when drilling

(2) outer casing was set into competent rock at 5.5' bgs and acts as a protective casing.

(3) well flush w/ surface.

(4) bentonite ~~between~~ between 35 to 36' bgs.

*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

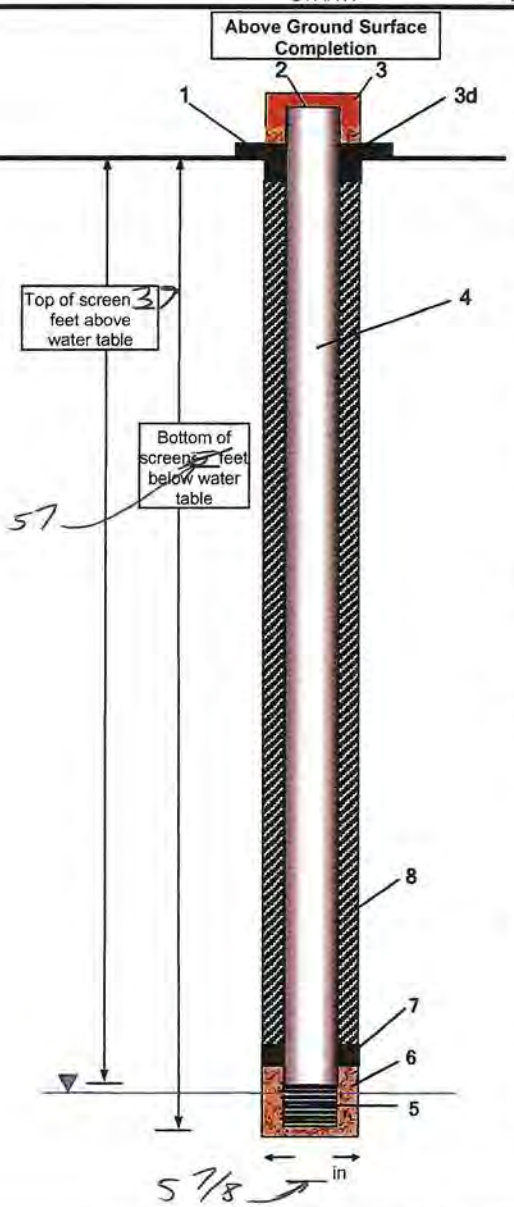
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MWFH-10D	1

~~Project Name~~ Seneca Army Depot Romulus, NY Bldg 116 (South)

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT:	Seneca Army Depot, Romulus, NY	LOCATION:	Bldg 116 (South)
DRILLING SUBCONTRACTOR:	NYSG	DRILLER:	J. Adamcha
DRILLING METHOD / EQUIPMENT:	Mobile Drilling, air-hammer, coring	HELPERS:	~~M~~ M. Trevett
WATER LEVEL:	START:	END:	GEOLOGIST: E. Asleton



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 4"
- b) height above ground: 0
- c) length below ground: 37'
- d) type / quantity of sealant: –
- e) well centralizers: 35'-36'

5- Well screen :
- a) type / diameter: PVC / 4"
- b) slot size: 10-in
- c) length: 20'

6- Well screen filter pack :
- a) type: Morie #0, Morie #00
- b) length: 22', 2'

7- Bentonite seal :
- a) method of placement: free pour from surface
- b) type: chips
- c) length: 5'

8- Grout :
- a) type: Type I
- b) grout mix: cement/sand
- c) method of placement: tremie
- d) depth (feet bgs): 0-28

(9) outer casing
- 0-55'
- grout in place
- steel drill casing (6-in dia)
- Type I grout
- cement/sand mix

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** USACE | **BORING NO.:** MW FAH-11

PROJECT: Soweca Army Dept
SWMU # (AREA): West of former med. Bldg
SOP NO.:

START DATE: 8-10-20
FINISH DATE: 8-10-20
CONTRACTOR: MEC / Parsons
DRILLER: J. Ramsdale
INSPECTOR: E Ashton
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA. (in)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
AH	5 7/8	—	—	—	—	—

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

AH = Air hammer

MONITORING EQUPMENT SUMMARY — NA

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE — NA

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
- No air monitoring was performed because PFAS are not detectable by PID
- No chaser sand use because of shallow depth
- No water use during drilling.

SAMPLES TAKEN: — NA

SAMPLES	
DUPLICATES	
MS/MSD	
MRD	

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW PH-11

COMMENTS:
- Drill casing & split spoon sampling
- Av-hammering. No water used
- WR = weathered Rock
- CR = competent rock

DRILLER: J. Panschow (MYEG)
INSPECTOR: E. Ashton (Parsons)
DATE: 8-10-20

DEPTH (Ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0'	4	—	22	NA	NA	NA	NA	(0-2') dry, hard, brown, SICT, trace fragments, some fine gravel, trace roots No odor or stains - Fill w/ weathered rock at bottom.	ML/WR	
	11									
	28									
2'	34									
	45		15							
	32							(2'-4') SAA	"	
	21									
4'	31							(4'-5.3') weathered shale, dry.	WR	
	16		6					span refusal 5.3' Sp		
	16									
	5/3							- Av hammer from 5.3 to 25' Sp.		
6'	-		NA						CR = 6'	
								- Installed 25' of screen (5'-25')		
								- CR at 5.5 to 6.0' Sp		
								- Spoke w/ Todd Belanger and it was decided to drill to 25' Sp to see if water is encountered and WR Zone would also be screened if water is present at Zone.		
25'										

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: US ACOE	WELL #: MW FH-11

PROJECT: Seneca Army Depot
LOCATION: West of Farm Mod. Bldg.

PROJECT NO: 749674.08.000
INSPECTOR: E Ashton
CHECKED BY:

DRILLING CONTRACTOR: MEG
DRILLER: J. Rauscher
DRILLING COMPLETED: 8-10-20
BORING DEPTH: 25'
DRILLING METHOD(S): Air-hammer/split spoon
BORING DIAMETER(S): 3 7/8"
ASSOCIATED SWMU/AOC:

POW DEPTH: 25'
INSTALLATION STARTED: 8-10-20
INSTALLATION COMPLETED: 8-10-20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW: MEG
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5 LENGTH: 5 TOR: —

RISER:
TOC: See Note (1) TYPE: PVC DIAMETER: 2" LENGTH: 5 (1)

SCREEN:
TSC: 5 TYPE: PVC DIAMETER: 2" LENGTH: 20' SLOT SIZE: 10-in

POINT OF WELL: (SILT SUMP) — NA
YPE: BSC: POW:

GROUT:
TG: surface TYPE: Type I (Cement/Bent) LENGTH: 2.5

SEAL: TBS: 2.5' TYPE: Bent. Chips LENGTH: 2'

SAND PACK: TSP: 4.5' TYPE: Morie #0 LENGTH: 20.5'

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS — NA
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
(1) Riser is from 0-5' sgl w/ 2.5' of riser above ground - Total length of 7.5'
(2) No water used during drilling
(3) No flicker sand used because of shallow depth

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW FH-11	1

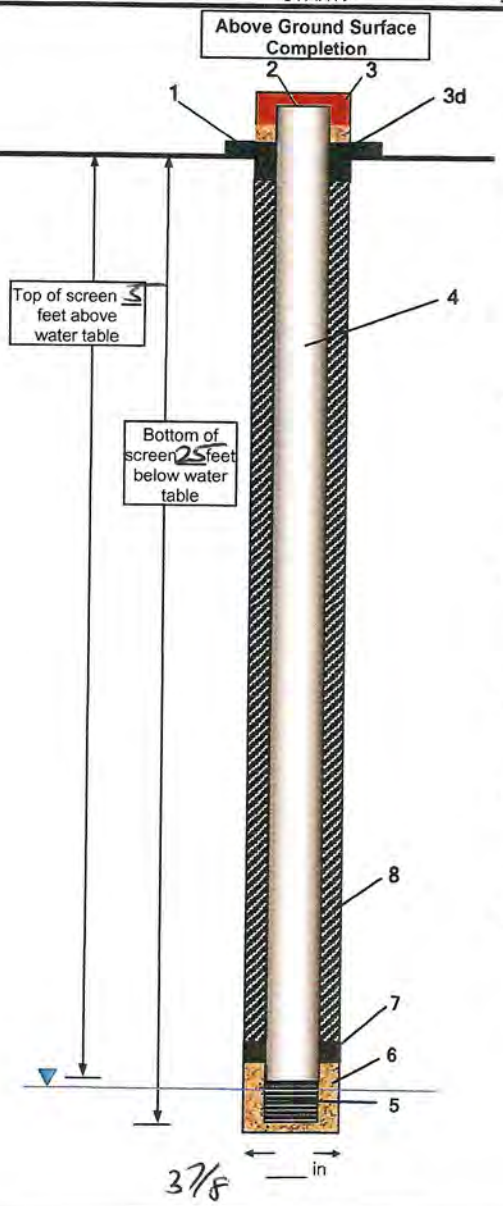
~~Project Name~~

Seneca Army Depot Romulus, NY west of former med. bldg

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY
LOCATION: west of former med. Bldg
DRILLING SUBCONTRACTOR: NEG
DRILLER: J. Ranschau
DRILLING METHOD / EQUIPMENT: split spoon; air-hammer
HELPERS: M. Fogt M. Trivett
WATER LEVEL: START: END:
GEOLOGIST: E. Ashton



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC 12"
- b) height above ground: 2.5'
- c) length below ground: 5'
- d) type / quantity of sealant: –
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC 12"
- b) slot size: 10-in
- c) length: 20'

6- Well screen filter pack :
- a) type: Morie #0
- b) length: 20.5'

7- Bentonite seal :
- a) method of placement: pour from surface
- b) type: chips
- c) length: 2'

8- Grout :
- a) type: Type I
- b) grout mix: cement / bent
- c) method of placement: pour from surface
- d) depth (feet bgs): 2.5'

(E) M cuttings sand used due to shallow depths.

SEAD-25 Boring Logs

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** | **BORING NO.:** 25-20

PROJECT: Seneca Army Depot
SWMU = (AREA): SEAD 25
SOP NO.:

START DATE: 6/10/19
FINISH DATE: 6/10/19
CONTRACTOR: Parratt-Wolff
DRILLER: Mark Tower
INSPECTOR: me
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

Rig Type

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2'	SS	HMR	140
Auger	5"	5'	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
PID	10.6 eV		Diffpan	0545	5/10/19	0545	5/10/19	50-60s, Rain, Windy

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	5/10/19		
SOIL AMOUNT : (fraction of drum)	-		
DRUM #, LOCATION:	-		

COMMENTS:
Used a Dietch Rig. with 5" augers, Split spoon, and a hammer bit

SAMPLES TAKEN:

SAMPLES	-
DUPLICATES	-
MS/MSD	-
MRD	-

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 25-20
COMMENTS: hit bedrock at 5.5', got the last Split Spoon 8'-10' weathered shale with some moist silty cracks while using air-hammer after split out ~11'		DRILLER: Mark Eaves INSPECTOR: ALR DATE: 5/31 10/19

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	9-9 12	1.75 2'	1.75			0.0		Moist, Stiff, Brown, Silt with fine Gravel, trace clay & fine Sand, no odor	ML	
4'	13-10 9-12	2'	4'			0.0		Moist, very moist, stiff, Brown, SAA more clay, no odor	ML	
6'	7-27 20 5/3	2'	1.75			0.0		Top 3" dry-slightly moist, very stiff, Brown SILT, trace Gravel, fine sand, no	ML	
8' 10'	37- 50/4"	2'	6"			0.0		Bottom 1" Dry-slightly moist, Hard, SHALE (bedrock), no odor Dry, Med Grey, SHALE (bedrock) signs of weathering moist Site, no odor	GM GM	
	2							Split spoon refusal switch to air-hammer at 10'		

Rock at 5.5'

Well construction:

PVC Screen 14.16 – 4.16

Filtersand 14.16 – 2.16

(Bellmore Natural Sand B) ~3 bag

Bentonite 2.16 – 0.5

(Envirobug medium)

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** | **BORING NO.:** 25-21

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 25
SOP NO.:

START DATE: 6/7/19
FINISH DATE: 6/8/19
CONTRACTOR: Penetrex with
DRILLER: Mark Eaves
INSPECTOR: Ave
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	8.5"	2'	2'	SS	HMR	140
Air-hammer	5"	-	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
PID	ppm		0.0 ppm	0815	6/7/19	0815	6/7/19	50-60; cloudy rain

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	6/7/19		
SOIL AMOUNT: (fraction of drum)	-		
DRUM #, LOCATION:	-		

COMMENTS:
Used a Dietrich Rig. w/ 5" augers, split spoon, and "air-hammer bit"

SAMPLES TAKEN:

SAMPLES	-
DUPLICATES	-
MS/MSD	-
MRD	-

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 25-21
COMMENTS: Bedrock @ 5'. Shale weathered, competent below		DRILLER: Mark Eaves INSPECTOR: AVC DATE: 6/7/19

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH IN (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'						00		Moist, Brown, SILT with fine gravel (Top 1.5')	ML	
								~~Bottom 1.5'~~ w/ trace Clay.		
4'						00		Dry. Hard, GRAVEL (Bedrock Shale), no odor	GM	

Well Construction:

DVC Screen 10-5'

Filter Sand 5-3'

(Bellmore, natural Sand, B)

Bentonite. 3-1' (enviroplug, medium)

Pipe 5-0'

BEDROCK MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW25-22D

PROJECT: Seneca Army Depot
SWMU # (AREA): Ordinance Road
SOP NO.: SEAD 25

PROJECT NO: 745674.08cc
INSPECTOR: E. Ashton
CHECKED BY:

DRILLING CONTRACTOR: MEG
DRILLER: J. Ranscher
DRILLING COMPLETED: 7-1-20
BORING DEPTH: 49'
DRILLING METHOD(S): Air-Hammer
BORING DIAMETER(S): 3 7/8"

POW DEPTH (ft): 49'
INSTALLATION STARTED: 7-1-20
INSTALLATION COMPLETED: 7-1-20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW: MEG
BEDROCK CONFIRMED (Y/N?) Y

PROTECTIVE SURFACE CASING – NA
DIAMETER (ft): LENGTH (ft):

RISER
TYPE: PVC
DIAMETER(in): 2
TR (ft): 0 (2)
LENGTH (ft): 41 (2)

SURFACE COLLAR
TYPE:
THICKNESS OF CENTER (ft):
RADIUS (ft):
THICKNESS OF EDGE (in):

SCREEN
TYPE: PVC
DIAMETER (in): 2
SLOT SIZE: 10-in
TSC (ft): 39
LENGTH (ft): 10

OUTER CASING
TYPE: steel drill casing
DIAMETER (in): 4
POC (ft): 8
TC (ft): 0 (1)
LENGTH (ft): 8

POINT OF WELL (SILT SUMP) – NA
TYPE:
BSC (ft):
POW(ft):

GROUT
TYPE: Cement/Bent
TG (ft): 0
LENGTH (ft): ~~38~~ 27

SEAL
TYPE: Bent chips
TBS (ft): ~~30~~ 27
LENGTH (ft): ~~8~~ 7

SAND PACK
FINE SAND TYPE: Morie #00
TSP (ft): 35
LENGTH (ft): 2
COARSE SAND TYPE: Morie #0
TSP (ft): 37
LENGTH (ft): 12

ACRONYMS

TR	Top of Riser	BSC	Bottom of Screen	TG	Top of Grout
TSC	Top of Screen	POW	Point of Well	TBS	Top of Bentonite Seal
BGD	Background	TSP	Top of Sand Pack		

COMMENTS:
(1) No water used for drilling
(2)

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

(1) Outer casing was set into competent rock at 8' bgs and acts as a protective casing
(2) Riser extends 2' above surface
(3)
(4) Centralizer (37-38')
(5) During installation of seal, bridge occurred and water was

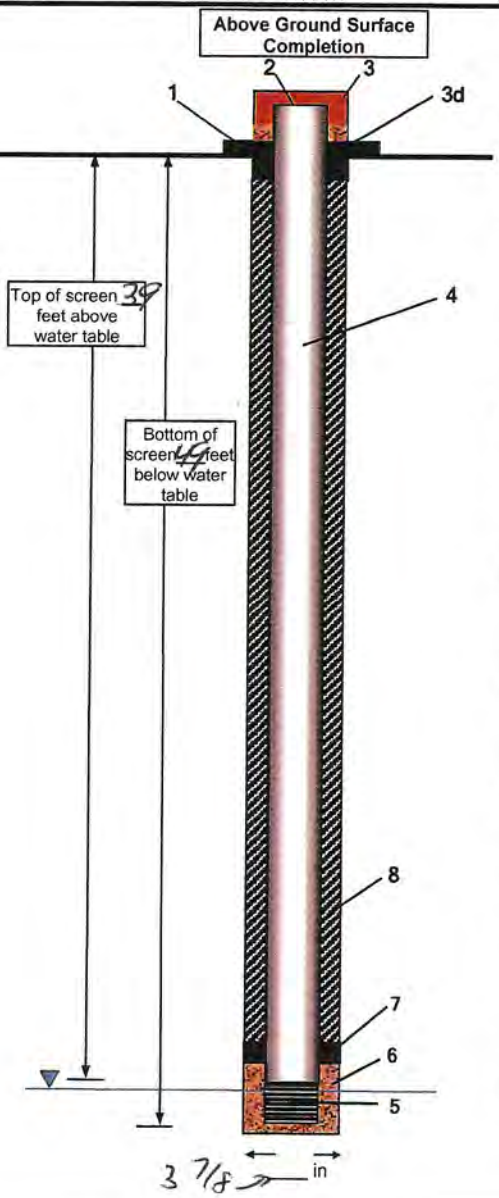
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW25-22D	1

Project Name Seneca Army Depot Ordinance Road

Location Groundwater Monitoring Well Romulus, NY

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY
LOCATION: Ordinance Road - SEAD 25
DRILLING SUBCONTRACTOR: NYSEG
DRILLER: J. Rauscher
DRILLING METHOD / EQUIPMENT: ATV, air-hammer, roller bit w/ air
HELPERS: M. Trevett
WATER LEVEL: START: END:
GEOLOGIST: E Hylton



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: 2'
- c) length below ground: 39'
- d) type / quantity of sealant: —
- e) well centralizers: 37-38'

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-slot
- c) length: 10'

6- Well screen filter pack :
- a) type: Morie #00, Morie #0
- b) length: 2', 12'

7- Bentonite seal :
- a) method of placement: free pour from surface
- b) type: chips
- c) length: ~~3'~~ 7'

8- Grout :
- a) type: Type I
- b) grout mix: cement/bent
- c) method of placement: tremie
- d) depth (feet bgs): ~~0-30'~~ 0-27'

(9) outer Casing
- 0-8' bgs
- grouted in place

- steel drill casing (4-in dia)
- Type I grout (cement/bent)

OVERBURDEN BORING REPORT

PARSONS

CLIENT: USACE

BORING NO.: MW25-22D

COMMENTS:
(1) Roller bit w/ water, drill casing, split spoon, HSA
(2) WS = weathered shale
(3) CR = Competent Rock
PID (ppm)

DRILLER: J. Rauscher (NYEG)

INSPECTOR: E. Ashton (Parsons)

DATE: 6-29-20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0	3	0.0	20	NA	NA	NA	NA	(0'-2') 0-1.9' = dry, stiff, brown, SILT, some clay, low plasticity, ~~little~~ organic roots top trace f-gravel, no odor or stains - fill ~~too much~~	ML	NA
	5									
	7									
	28									
2	38	0.0	12							
	50/.4							(1.9-2') dry, hard, ~~gray~~ gray, WEATHERED SHALE with little silt, no odor or stains.	WS	
	–									
	–									
4	50/.2	0.0	2							
	–							(2-2.10'): SAA (1.9-2'). Spoon refusal 2.1' bgs HSA to 4' bgs and attempt spoon.	WS	
	–									
	–									
6	NA	NA	NA					(4-4.2') dry, hard, gray, WEATHERED SHALE. spoon refusal at 4.2' bgs. Roller biting to and into competent rock.	WS.	
								- Competent rock at ≈ 4.5' bgs.	CR	
								- Roller biting to 8' to set 4-in drill casing. Grouted in place		
8								- No significant water lost to formation during drilling.		

CORE BORING REPORT

PARSONS	CLIENT: USACE	BORING #: MW25-220

PROJECT: Sowega Army Depot
SWMU # (AREA): Ordinance Road - SEAD 25
SOP NO.:

DATE CORING STARTED: 6-30-20
DATE CORING COMPLETED: ~~6-30-20~~ 7-1-20
CONTRACTOR: MEG / Parsons
DRILLER: J. Remacha (MEG)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST: "
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: —
OVERBURDEN THICKNESS: —
GALLONS OF WATER USED —

MiniRae PID 3000 →

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
	5	0.0ppm	11:00

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
AH	—	CONTINUOUS	3 7/8"	NA

COMMENTS:
- AV-hammer borehole
- Roller bit w/ air.

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
8	NA	NA	0.0 ppm	NA		NA	- Start to drill in competent rock at ≈ 8' bgs. - AV-hammer, as approved by USACE. - no water used. - Soil cuttings 8-11' bgs - dry. Sand. - wet at 11' bgs and wet all the way down to 49' bgs. Based on cuttings. - Borehole making good water. Needed strong compressor to drill from 31' - 49' bgs. Roller bit to 49' w/ air. - Stopped drilling at 49' bgs - let the borehole fill up
49							

INVESTIGATION DERIVED WASTE: NA ~~7~~ 3 times used pumped out

DATE		water stayed	turbid
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 25-22

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 25
SOP NO.:

START DATE: 5/13/19
FINISH DATE: 5/13/19
CONTRACTOR: Parratt-Wolff
DRILLER: Mark Eaves
INSPECTOR: Ave
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? Y N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2'	SS	HMR	140
Air-Hammer	5"	-	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
PID Mini-RAE 3000	VOC ppm	-	0.0	0910	5/13/19	0910	5/13/19	40's Rain

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	5/13/19		
SOIL AMOUNT : (fraction of drum)	-		
DRUM #, LOCATION:			

COMMENTS:
Used a Pietreen Rig w/ 5" augers, split spoon, and air hammer

SAMPLES TAKEN:

SAMPLES	-
DUPLICATES	-
MS/MSD	-
MRD	-

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 25-22
COMMENTS: Overburden at ~2.5-3', Weathered bedrock (shale) at 3.5'. Advance w. mud-hammer after 6' no SS taken		DRILLER: Mark Eaves INSPECTOR: Ave DATE: ~~5~~ 5/13/19

DEPTH (FEET)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	4 10-10	2'	1'			ON		Moist - Wet, Stiff, Brown SILT, with fine Gravel, little clay, organics, no odor	ML	
4'	30-72 30-50/2	2'	1'			ON		Top 9" Moist - very, medium dense, fine GRAVEL, with Silt and fine sand Bottom 3" slightly moist, Very dense SHALE (w.r.)	GM	
6'	50/3	3"	3"			ON		Moist, Hard, Grey-Brown, SHALE with Silt, and fine gravel, no odor	GM	

Well construction

PVC Screen ~~5-15~~ Ae 4.5-1 ~~4~~ 4, 5'

Filter Sand ~~3-15~~ Ae 14.5-2.5'

(Bellmore, natural sand, B)

Bentonite ~~3-1~~ Ae 2.5-1.0'

(enviroplug, medium)

DTB: 14.5'

DTW: initially 10' then rose to 2.10'

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** | **BORING NO.:** 25-23

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 25
SOP NO.:

START DATE: 6/8/19
FINISH DATE: 6/8/19
CONTRACTOR: Parratt Wolff
DRILLER: Brent Mack
INSPECTOR: AVC Forest
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2'	Split Spoon	HMR	140
Air-rotary	5"	—	—	—		

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRAE 3000	ppm		0.0 ppm	0900	6/8/19	0800	6/8/19	46°, 5-9mph

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	6/8/19		
SOIL AMOUNT: (fraction of drum)	—		
DRUM #, LOCATION:	—		

COMMENTS:
Used a Dietrich Rig with 5" augers, split spoon and a "air-hammer bit"

SAMPLES TAKEN:

SAMPLES	—
DUPLICATES	—
MS/MSD	—
MRD	—

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 25-23
COMMENTS: Bedrock at 5' - Shale, slightly weathered. Similar to at 15'		DRILLER: ~~Brent~~ Mark Eckes INSPECTOR: AWC DATE: 6/8/19

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'		2'	1.5'			0.0		Moist, medium stiff, Brown, SILT, with fine-medium Gravel, trace clay, organics containing gravels, no odor	ML	
4'	3 7 50/2	2'	1'			0.0		Slightly moist, Hard, Grey-Brown fine GRAVEL, with Silt, and medium-coarse gravel, no odor	GM	
6'	21-50/4 40/4	1.75'	1.5'			0.0		Top 2", moist, stiff, Brown SILTY Clay little f. gravel, no odor Bottom 1' Dry, Hard, Grey, SHALE (bedrock), fine Gravel + Sand	GM	

Well Construction

PVC Screen 15-5'

Filter Sand 15-3' (Bellmore natural sand, 13) ~3 bags

Bentonite 3-1'

PVC "Pipe" 5-0'

(centrosplug, medium)

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: SEAD 25-24

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 25
SOP NO.:

START DATE: 5/17/19
FINISH DATE: 5/17/19
CONTRACTOR: Parratt-Wolff
DRILLER: Mark Eares
INSPECTOR: MGC
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(in)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA Augers	8.5"	2' CS	2"	SS	HMR	140
Air Rotary	6" SM					

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
PID	MiniRae 3000	ppm	0.0ppm	1015	5/17/19		5/17/19	60s, cloudy, winds @ 0 mph

MONITORING ACRONYMS

PID	PHOTO-IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME-IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	5/17/19		
SOIL AMOUNT: (fraction of drum)	–		
DRUM #, LOCATION:	–		

COMMENTS: Used Diatech drilling w/ 8" augers to 8.5', then air rotary to 10' bgs.

SAMPLES TAKEN:

SAMPLES	–
DUPLICATES	–
MS/MSD	–
MRD	–

OVERBURDEN BORING REPORT

MW25-24

PARSONS | CLIENT: | BORING NO.: SEAD25-~~26~~

COMMENTS: Augered to 8.5' bgs, then refusal at weathered shale bedrock. Air rotary to 10', install 5' screen (5-10' bgs), sand, + bentonite.

DRILLER: Mark
INSPECTOR: MGC
DATE: 5/17/19

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	3-5 / 14-15	2'	1			0.0		moist, dk brown, SILT, little F Gravel, some organics in top ~2". ROCK in bottom ~4". NO odor	ML	
4'	10-8 / 8-12	2'	0.75			0.0		Top ~3": Wet, brown-gray F-C GRAVEL, some SILT. Bottom ~6": Wet, brown-gray SILT, little F Gravel, trace clay. NO odor	GM / ML	
6'	7-9 / 10-9	2'	0.85			0.0		Top 6": moist, brown-gray, SILT, little F-C Gravel. Bottom 4": moist, F SAND, some Silt, little F-C Gravel. No odor.	ML / SM	
8'	29-50/4"	1.3'	0.5			0.0		Top 2": Wet, brown, SILT and F sand, little F Gravel. Bottom 4': Weathered Shale.	ML	
								Drilled to 10' bgs w/ auger + air rotary		
								~~Well Construction:~~		
								Total depth: 10'		
								Screen: 5-10' (PVC)		
								Filter Sand: 3-10' (Bellmore, Natural Sand, 8-2 bags)		
								Bentonite: 1-3' (Enviroplug, medium- 1 bag)		
								Finished w/ road box, flush mount cover, and 2' diameter concrete pad		

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 25-25

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 25
SOP NO.:

START DATE: 5/16/19
FINISH DATE: 5/16/19
CONTRACTOR: Parratt Wolff
DRILLER: Mark Ewell
INSPECTOR: AWL
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2'	SS	HMR	140

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRAE 3000	VOC	-	0.0 ppm	0810	5/16/19	0810	5/16/19	50's cloudy

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	5/16/19		
SOIL AMOUNT: (fraction of drum)	-		
DRUM #, LOCATION:	-		

COMMENTS:
Used a Dietrich drill rig with 5'x 5" augers with 2' splitspoon and on "air-hammer"

SAMPLES TAKEN:

SAMPLES	-
DUPLICATES	-
MS/MSD	-
MRD	

PAGE OF

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 25-25

COMMENTS: Weathered Shale (bedrock) first located at 5', took 3 split spoon samples through 6' using augers then advanced to 10' using an "air-hammer"

DRILLER: Mark Engel
INSPECTOR: AVE
DATE: 5/6/19

Above bedrock soil was wet, bedrock was also wet while using air-hammer water came out of augerhole.

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	1-2 2-3	2'	1.75'	1.75'		0.0		Moist very, Soft, Brown, Silt, w/ some fine gravel, little clay, trace organics (at top), no odor	ML	
4'	5-6 6-8	2'	1'	1'		0.0		wet, medium stiff, Brown, Top 4" SAA. (lighter) At Bottom 8" wet, very loose, Light Brown f-c SAND w/ f-c gravel, some silt.	SM	
6'	39 50/2	8"	8"	8"		0.0		Top 6.5" wet, Brown. Dense, Silty Clay, some gravel Bottom 6.5" wet, very dense, Brown-Black SHALE & Silt and some fine Sand	SM	

Well Construction:

PVC Screen 10-5'

Filter sand 10-3'

(Bellmore, Natural Sand, 3)+4bags

Bentonite 3-1'

(envirplug, medium)

DTW: 0.0 ft

DTB: 9.62 ft

Soil Boring Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MW25-26
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-25	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:	Just north of drainage	**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7372708
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8417513
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees
		BORE HOLE SIZE:	8.25 Inch	**ELEVATION:**	646.32548
		HOLE SIZE:	4.25 Inch	**Z COOR UNIT:**	Feet
		MULTIPLE CASING SIZES:		**DRILLING ORIENTATION:**	
		BORING LOG DATE/TIME:		**BEARING:**	
		DATE/TIME START:	09/11/2019 16:40	**INCLINATION:**	
		DATE/TIME FINISH:	09/11/2019 16:40		
		SAMPLING EQUIPMENT:		**BORING DETAILS:**	
		SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
				BORING LOG END DEPTH:	14 Feet

FIELD METER #1:		**FIELD METER #2:**	
TYPE:	PID	**TYPE:**	Water Level
SERIAL#:		**SERIAL#:**	
MODEL:		**MODEL:**	
LIMIT:	0 ppm	**LIMIT:**	Ft
H&S:	5 ppm	**H&S:**	Ft
COMMENTS:		**COMMENTS:**	

FIELD SCREENING METHOD

METER #1:	Breathing Zone	**METER #2:**	Depth Reading

BACKFILL NOTES:

DEPTH	Feet		**FIELD METER #1**		**FIELD METER #2**		**CASING DETAILS**								
TOP	**BTM**	**SCREENING INTERVAL**	**ppm**	**H&S**	**Ft**		**DIAM In**	**LGTH Ft**	**RCVY LGTH**	**USCS Class.**	**SOIL MATRIX DESCRIPTION**	**#REF!**	**BEDROCK DEPTH/COR E LGTH**	**BORING INTERVAL NOTES**
0	0										Hole cleared by Other			Hole Clearing Notes: Other
0	0.75									OL	Dry, Brown SILT, And Medium to Coarse Gravel			Topsoil with pieces of shale
0.75	2									GP	Weathered BEDROCK			Weathered BEDROCK
2	2.5									GP	Dry, Gray, Medium to Coarse weathered BEDROCK, Some Silt		2.5 Ft 11.5 Ft	Weathered BEDROCK, Refusal at 2.5'

Sampling Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MW25-26
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-25	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:	Just north of drainage	**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7372708
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8417513
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees
FIELD METER #1:		**FIELD METER #2:**		**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	646.32548
TYPE:	PID	**TYPE:**	Water Level	**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:		**SERIAL#:**		**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:		**MODEL:**		**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**DATE/TIME START:**	09/11/2019 16:40	**INCLINATION:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME FINISH:**	09/11/2019 16:40		
COMMENTS:		**COMMENTS:**		**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD						**BORING LOG END DEPTH:**	14 Feet
METER #1:	Breathing Zone	**METER #2:**	Depth Reading		**BACKFILL NOTES:**		

DEPTH	Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	0.75	Dry, Brown SILT, And Medium to Coarse Gravel			
0.75	2	Weathered BEDROCK			
2	2.5	Dry, Gray, Medium to Coarse weathered BEDROCK, Some Silt			

Soil Boring Log - Hollow Stem Auger

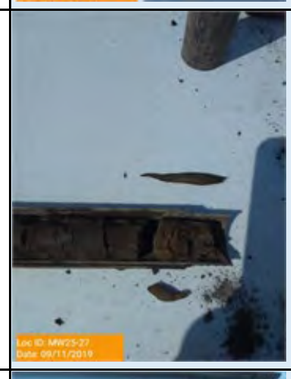
CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MW25-27
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-25	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:	Between railroad and drainage north of red building	**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7372081
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.843408
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees
FIELD METER #1:	**FIELD METER #2:**	**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	626.64044
TYPE:	**TYPE:**	**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:	**SERIAL#:**	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:	**MODEL:**	**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	**LIMIT:**	**DATE/TIME START:**	09/11/2019 11:45	**INCLINATION:**	
H&S:	**H&S:**	**DATE/TIME FINISH:**	09/11/2019 11:44		
COMMENTS:	**COMMENTS:**	**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
		SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD				**BORING LOG END DEPTH:**	15 Feet
METER #1:	**METER #2:**			**BACKFILL NOTES:**	

DEPTH	Feet		**FIELD METER #1**		**FIELD METER #2**		**CASING DETAILS**							
TOP	**BTM**	**SCREENING INTERVAL**	**0**		**0**		**DIAM In**	**LGTH Ft**	**RCVY LGTH**	**USCS Class.**	**SOIL MATRIX DESCRIPTION**	**#REF!**	**BEDROCK DEPTH/COR E LGTH**	**BORING INTERVAL NOTES**
0	0										Hole cleared by Other			Hole Clearing Notes: Other
0	2									ML	Damp, Brown - grayish SILT, Little Medium Gravel and Clay			
2	2.85										Void Space			
2.85	3.2									GW	Damp, Brown - grayish, Medium to Coarse GRAVEL, And Silt			
3.2	4									CH	Damp, Brown - grayish CLAY			
4	6									CH	Damp, Brown - grayish hard CLAY			Hard clay
6	6.6									CH	Moist, Brown - olive hard CLAY			
6.6	7									GP	Damp, Gray, Coarse weathered BEDROCK, Little Silt		7 Ft 8 Ft	Refusal at 7'

Sampling Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MW25-27
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-25	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:	Between railroad and drainage north of red building	**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7372081
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.843408
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees
FIELD METER #1:	**FIELD METER #2:**	**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	626.64044
TYPE:	**TYPE:**	**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:	**SERIAL#:**	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:	**MODEL:**	**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	**LIMIT:**	**DATE/TIME START:**	09/11/2019 11:45	**INCLINATION:**	
H&S:	**H&S:**	**DATE/TIME FINISH:**	09/11/2019 11:44		
COMMENTS:	**COMMENTS:**	**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
		SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD				**BORING LOG END DEPTH:**	15 Feet
METER #1:	**METER #2:**			**BACKFILL NOTES:**	

DEPTH	Feet				

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	2	Damp, Brown - grayish SILT, Little Medium Gravel and Clay			
2	2.85	Void Space			
2.85	3.2	Damp, Brown - grayish, Medium to Coarse GRAVEL, And Silt			
3.2	4	Damp, Brown - grayish CLAY			
4	6	Damp, Brown - grayish hard CLAY			

6	6.6	Moist, Brown - olive hard CLAY				
6.6	7	Damp, Gray, Coarse weathered BEDROCK, Little Silt				

Soil Boring Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MW25-28
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-25	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7371034
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8450647
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**					
TYPE:	PID	**TYPE:**	Water Level	**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	597.11288
SERIAL#:		**SERIAL#:**		**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
MODEL:		**MODEL:**		**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**BORING LOG DATE/TIME:**		**BEARING:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME START:**	09/10/2019 15:02	**INCLINATION:**	
COMMENTS:		**COMMENTS:**		**DATE/TIME FINISH:**	09/10/2019 15:01		
				SAMPLING EQUIPMENT:		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0.5 Feet
						BORING LOG END DEPTH:	13.5 Feet
FIELD SCREENING METHOD							
METER #1:	Breathing Zone	**METER #2:**	Depth Reading			**BACKFILL NOTES:**	

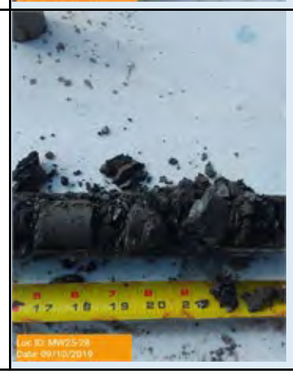
DEPTH	Feet		**FIELD METER #1**		**FIELD METER #2**		**CASING DETAILS**							
TOP	**BTM**	**SCREENING INTERVAL**	**ppm**	**H&S**	**Ft**		**DIAM In**	**LGTH Ft**	**RCVY LGTH**	**USCS Class.**	**SOIL MATRIX DESCRIPTION**	**#REF!**	**BEDROCK DEPTH/COR E LGTH**	**BORING INTERVAL NOTES**
0	0.5										Hole cleared by Hand Tools			Hole Clearing Notes: Hand Tools
0.5	0.75										Void Space			
0.75	2.25									CH	Wet, Brown - grayish CLAY, Little Silt, Trace Medium Gravel			Wet from surface water
2.25	2.5									GW	Wet, Gray - dark, Medium to Coarse BEDROCK			Weathered bedrock
2.5	3.5									GW			3.5 Ft 10 Ft	

Sampling Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MW25-28
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-25	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7371034
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8450647
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**					
TYPE:	PID	**TYPE:**	Water Level	**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	597.11288
SERIAL#:		**SERIAL#:**		**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
MODEL:		**MODEL:**		**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**BORING LOG DATE/TIME:**		**BEARING:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME START:**	09/10/2019 15:02	**INCLINATION:**	
COMMENTS:		**COMMENTS:**		**DATE/TIME FINISH:**	09/10/2019 15:01		
				SAMPLING EQUIPMENT:		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0.5 Feet
FIELD SCREENING METHOD						**BORING LOG END DEPTH:**	13.5 Feet
METER #1:	Breathing Zone	**METER #2:**	Depth Reading				

DEPTH	Feet							**BACKFILL NOTES:**	

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0.5	0.75	Void Space			
0.75	2.25	Wet, Brown - grayish CLAY, Little Silt, Trace Medium Gravel			
2.25	2.5	Wet, Gray - dark, Medium to Coarse BEDROCK			
2.5	3.5				

Soil Boring Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MW25-29
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Truck Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-25	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:	On roadway through wetlands	**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7387206
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8455602
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees
		BORE HOLE SIZE:	8.25 Inch	**ELEVATION:**	633.20212
		HOLE SIZE:	4.25 Inch	**Z COOR UNIT:**	Feet
		MULTIPLE CASING SIZES:		**DRILLING ORIENTATION:**	
		BORING LOG DATE/TIME:		**BEARING:**	
		DATE/TIME START:	09/11/2019 07:53	**INCLINATION:**	
		DATE/TIME FINISH:	09/11/2019 07:53		
		SAMPLING EQUIPMENT:		**BORING DETAILS:**	
		SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
				BORING LOG END DEPTH:	19 Feet

FIELD METER #1:		**FIELD METER #2:**	
TYPE:	PID	**TYPE:**	Water Level
SERIAL#:		**SERIAL#:**	
MODEL:		**MODEL:**	
LIMIT:	0 ppm	**LIMIT:**	Ft
H&S:	5 ppm	**H&S:**	Ft
COMMENTS:		**COMMENTS:**	

FIELD SCREENING METHOD

METER #1:		**METER #2:**

BACKFILL NOTES:

DEPTH	Feet		**FIELD METER #1**		**FIELD METER #2**		**CASING DETAILS**							
TOP	**BTM**	**SCREENING INTERVAL**	**ppm**	**H&S**	**Ft**		**DIAM In**	**LGTH Ft**	**RCVY LGTH**	**USCS Class.**	**SOIL MATRIX DESCRIPTION**	**#REF!**	**BEDROCK DEPTH/COR E LGTH**	**BORING INTERVAL NOTES**
0	0										Hole cleared by Hand Tools			Hole Clearing Notes: Hand Tools
0	2									GP	Dry, Gray, Medium to Coarse GRAVEL, And Silt. FILL	Whole spoon is roadway engineered		Road base material
2	2.25									GP	Dry, Gray, Medium to Coarse GRAVEL, And Silt. FILL	Roadway engineered material		
2.25	3.25									CH	Damp, Brown - grayish CLAY, And Silt			
3.25	4									GW			4 Ft 15 Ft	BEDROCK competent at 4.5 feet

Sampling Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MW25-29
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Truck Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-25	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:	On roadway through wetlands	**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7387206
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8455602
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees
FIELD METER #1:	**FIELD METER #2:**	**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	633.20212
TYPE: PID	**TYPE:** Water Level	**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:	**SERIAL#:**	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:	**MODEL:**	**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT: 0 ppm	**LIMIT:** Ft	**DATE/TIME START:**	09/11/2019 07:53	**INCLINATION:**	
H&S: 5 ppm	**H&S:** Ft	**DATE/TIME FINISH:**	09/11/2019 07:53		
COMMENTS:	**COMMENTS:**	**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
		SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD				**BORING LOG END DEPTH:**	19 Feet
METER #1:	**METER #2:**			**BACKFILL NOTES:**	

DEPTH	Feet				

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	2	Dry, Gray, Medium to Coarse GRAVEL, And Silt. FILL			
2	2.25	Dry, Gray, Medium to Coarse GRAVEL, And Silt. FILL			
2.25	3.25	Damp, Brown - grayish CLAY, And Silt			
3.25	4				

Soil Boring Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Richard Inclima Cory Mahony	**BORING/WELL NO.:**	MW25-30
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-25	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7403236
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8436676
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**					
TYPE:	PID	**TYPE:**	Water Level	**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	590.5512
SERIAL#:		**SERIAL#:**		**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
MODEL:		**MODEL:**		**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**BORING LOG DATE/TIME:**		**BEARING:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME START:**	09/13/2019 07:37	**INCLINATION:**	
COMMENTS:		**COMMENTS:**		**DATE/TIME FINISH:**	09/13/2019 07:36		
				SAMPLING EQUIPMENT:		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD						**BORING LOG END DEPTH:**	17 Feet
METER #1:		**METER #2:**					

BACKFILL NOTES:	

DEPTH	Feet		**FIELD METER #1**		**FIELD METER #2**		**CASING DETAILS**								
TOP	**BTM**	**SCREENING INTERVAL**	**ppm**	**H&S**	**Ft**		**DIAM In**	**LGTH Ft**	**RCVY LGTH**	**USCS Class.**	**SOIL MATRIX DESCRIPTION**	**#REF!**	**BEDROCK DEPTH/CORE LGTH**	**BORING INTERVAL NOTES**
0	0										Hole cleared by Other			Hole Clearing Notes: Other
0	2									ML	Damp, Brown - dark stiff SILT, Little Clay, Trace Fine Sand			
2	3									CH	Damp, Brown - light, stiff, CLAY, And Silt, Little Fine Sand, Trace Fine Gravel			
3	3.25										Dry, Gray, Coarse COBBLES, Little Clay			
3.25	4									ML	Damp, Brown - dark, very stiff, SILT, Little Clay and Sand, Trace Fine Gravel			
4	6									ML	Damp, Brown - Pale, very stiff, SILT, Some Clay, Little Medium to Coarse Gravel, Trace Fine Sand			
6	8									ML	Damp, Brown - grayish, stiff, SILT, Some Clay, Little Fine to Medium Sand, Trace Fine to Medium Gravel			Around 7', the silt becomes moist and dries back to damp at 7.5'.
8	8.75									ML	Damp, Brown - light, very stiff, SILT, Some Clay, Little Fine Sand, Trace Fine to Medium Gravel			
8.75	9												9 Ft 8 Ft	Weathered BEDROCK, refusal at 9

Sampling Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Richard Inclima Cory Mahony	**BORING/WELL NO.:**	MW25-30
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-25	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7403236
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8436676
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**		**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	590.5512
TYPE:	PID	**TYPE:**	Water Level	**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:		**SERIAL#:**		**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:		**MODEL:**		**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**DATE/TIME START:**	09/13/2019 07:37	**INCLINATION:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME FINISH:**	09/13/2019 07:36		
COMMENTS:		**COMMENTS:**		**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD						**BORING LOG END DEPTH:**	17 Feet
METER #1:		**METER #2:**			**BACKFILL NOTES:**		

DEPTH	Feet				

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	2	Damp, Brown - dark stiff SILT, Little Clay, Trace Fine Sand			
2	3	Damp, Brown - light, stiff, CLAY, And Silt, Little Fine Sand, Trace Fine Gravel			
3	3.25	Dry, Gray, Coarse COBBLES, Little Clay		Encountered single rock.	
3.25	4	Damp, Brown - dark, very stiff, SILT, Little Clay and Sand, Trace Fine Gravel			
4	6	Damp, Brown - Pale, very stiff, SILT, Some Clay, Little Medium to Coarse Gravel, Trace Fine Sand			

6	8	Damp, Brown - grayish, stiff, SILT, Some Clay, Little Fine to Medium Sand, Trace Fine to Medium Gravel				
8	8.75	Damp, Brown - light, very stiff, SILT, Some Clay, Little Fine Sand, Trace Fine to Medium Gravel				
8.75	9					

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW25-31S

PROJECT: Seneca Army Depot
LOCATION: Ordinance Road

PROJECT NO: 749679.0800
INSPECTOR: E. Ashton (Parsons)
CHECKED BY: _____

DRILLING CONTRACTOR: MACTEC
DRILLER: J. Rauscher
DRILLING COMPLETED: 6-30-20
BORING DEPTH: 16'
DRILLING METHOD(S): Rotosonic w/ Hollow Stem Auger
BORING DIAMETER(S): 3 7/8"
ASSOCIATED SWMU/AOC: —

POW DEPTH: 16'
INSTALLATION STARTED: 6-30-20
INSTALLATION COMPLETED: 6-30-20
SURFACE COMPLETION DATE: _____
COMPLETION CONTRACTOR/CREW: MACTEC
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION: _____

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5 LENGTH: 5 TOR: —

RISER:
TOC: See note (1) TYPE: PVC DIAMETER: 2 LENGTH: 6 (1)

SCREEN:
TSC: 6 TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10"

POINT OF WELL: (SILT SUMP) — NA
YPE: _____ BSC: _____ POW: _____

GROUT:
TG: Surface TYPE: Type I (cement/bent) LENGTH: 2'

SEAL: TBS: 2 TYPE: Bent. chips LENGTH: 2'

SAND PACK: TSP: ~~#0~~ 4' TYPE: #0 LENGTH: 12'

SURFACE COLLAR:
TYPE: _____ RADIUS: _____ THICKNESS CENTER: _____ THICKNESS EDGE: _____

CENTRALIZER DEPTHS — NA
DEPTH 1: _____ DEPTH 2: _____ DEPTH 3: _____ DEPTH 4: _____

COMMENTS: (1) Riser is from 0-6' bgs w/ 2.3' riser above ground. Total length is 8.3'.
(2) 10 gals lost to formation during drilling
(3) Protective casing
(4) No cuttings used because of shallow depth.

*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

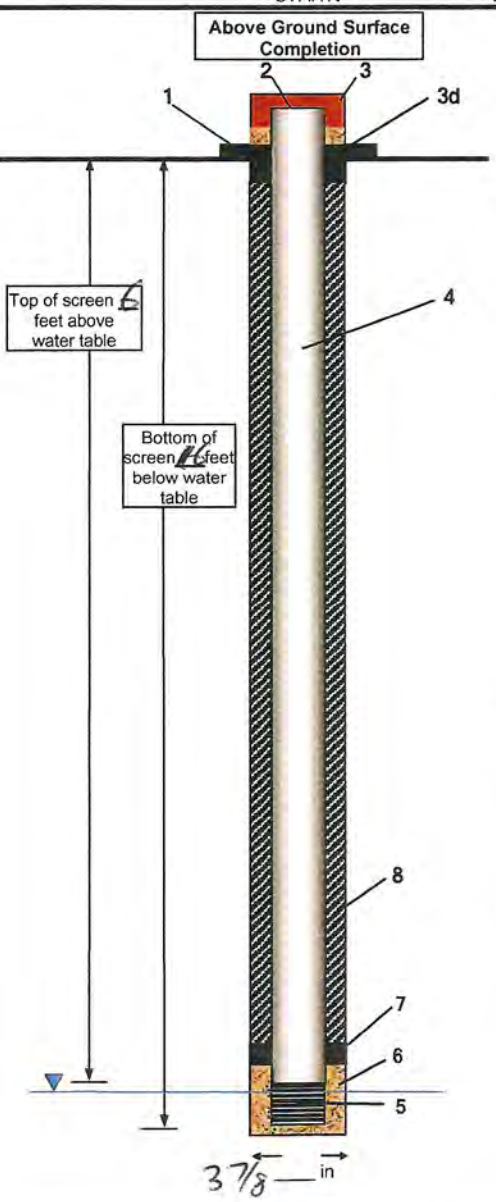
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW25-315	1

~~Project Name~~ Seneca Army Depot Romulus, NY

Location **Groundwater Monitoring Well** Ordinance Road

WELL INSTALLATION DATA RECORD

PROJECT:	Seneca Army Depot, Romulus, NY	LOCATION:	Ordance Road
DRILLING SUBCONTRACTOR:	NYEC	DRILLER:	J. Ramsch
DRILLING METHOD / EQUIPMENT:	ATV, rollerbit w/H2O, splitspoon	HELPERS:	A. Skinner
WATER LEVEL:	START:	END:	GEOLOGIST: E. Ashton



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing : _____
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing : PVC / 2"
- a) type / diameter
- b) height above ground — 2-3'
- c) length below ground — 6'
- d) type / quantity of sealant — -
- e) well centralizers — NA

5- Well screen : PVC / 2"
- a) type / diameter
- b) slot size — 10-in
- c) length — 10'

6- Well screen filter pack :
- a) type — Morie #0
- b) length — 12'

7- Bentonite seal :
- a) method of placement — pour from surface
- b) type — chips
- c) length — 2'

8- Grout :
- a) type — Type I
- b) grout mix — cement / bent
- c) method of placement — pour from surface
- d) depth (feet bgs) — 2'

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW 25-31S

PROJECT: Seneca Army Depot
SWMU # (AREA): Ordinance Road
SOP NO.:

START DATE: 6-29-20
FINISH DATE: 6-30-20
CONTRACTOR: AMEC / Parsons
DRILLER: J. Ranscher
INSPECTOR: E. Ashton
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA. (in)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
RB	3 7/8	0-16	2x2"	SS	HHR	140lbs/30in

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRae 3000	PID	-	0.0 ppm	0830	6-29-20	6-29-20	0730	Sunny - 80's
"	"	"	"	0845	6-30-20	6-30-20	0730	Partly Cldy - 50's

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE - NA

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
(1) RB and split spoon for sampling.
(2) No choker sand used because of shallow depth
(3) 10-gals of water lost to formation during drilling.

SAMPLES TAKEN: - NA

SAMPLES	
DUPLICATES	
MS/MSD	
MRD	

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW25-31S

COMMENTS:
(1) ~~HSA~~ Roller bit w/ water & split spoon sampling.
(2) WS = weathered shale
(3) CR = competent rock
PID (ppm)

DRILLER: J. Ranscher (CATEG)
INSPECTOR: E. Akten (Parsons)
DATE: 6-29-20 & 6-30-20

DEPTH (ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0	7	0.0	19	NA	NA	NA	NA	(0-2'): (0-1.6') dry, very stiff, brown, SILT, some f-sand and f-gravel, organic roots, no odor or stains, Fill	Fill	
	12									
	7									
2	7									
	8	0.0	17							
	7							(1.6-2') dry, med. stiff, brown, f-grained SILT, trace clay & organic roots, low plasticity, no odor or stains - Till	ML	
	12									
4	15									
	29	0.0	15							
	16									
	27							(2-4') dry, very stiff, brown, SILT, little clay, trace f-sand, low plasticity, no odor or stains. Till	ML	
6	9/.1									
	9/.1	0.0	0.1							
	-									
	-									
8	-									
	NA	NA	NA					(4-5.7') (4'-4.9') = wet, hard, gray, WEATHERED SHALE, some silt, little clay, no odor or stains.	WS w/ ML	
								(4.9'-5.7') = wet, hard, gray to brown, CLAY, some silt, f-c gravel, med. plasticity, no odor or stains - Till weather shale in tip of spoon. spoon refusal at 5.7' bgs Roller bit to 6' bgs	CL/ML	
								(6'-6.1') WEATHERED SHALE Spoon refusal at 6.1' bgs Roller bit to 16' bgs. - Competent rock at 7' bgs to 16' bgs.	CR.	
16										

- 10 gals lost to formation during drilling.
- installed well from 6-16' bgs

BEDROCK MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW25-310

PROJECT:	Seneca Army Depot	PROJECT NO:	749674.08000
SWMU # (AREA):	~~Grid~~ Ordinance Road SEAD-25	INSPECTOR:	E. Ashton (Parsons)
SOP NO.:		CHECKED BY:	

DRILLING CONTRACTOR:	MEG	POW DEPTH (ft):	81
DRILLER:	J. Rausch	INSTALLATION STARTED:	7-2-20
DRILLING COMPLETED:	7-2-20	INSTALLATION COMPLETED:	7-2-20
BORING DEPTH:	81'	SURFACE COMPLETION DATE:	
DRILLING METHOD(S):	Air-Hammer	COMPLETION CONTRACTOR/CREW:	MEG
BORING DIAMETER(S):	3 7/8"	BEDROCK CONFIRMED (Y/N?)	Y

PROTECTIVE SURFACE CASING – NA

DIAMETER (ft): _____ LENGTH (ft): _____

RISER

TYPE: PVC TR (ft): 0 (2)

DIAMETER(in): 2 LENGTH (ft): 43 ~~44~~ (2)

SURFACE COLLAR

TYPE: _____ RADIUS (ft): _____

THICKNESS OF CENTER (ft): _____ THICKNESS OF EDGE (in): _____

SCREEN

TYPE: PVC TSC (ft): 41

DIAMETER (in): 2 SLOT SIZE: 10-in LENGTH (ft): 40

OUTER CASING

TYPE: steel drill casing TC (ft): 0 (1)

DIAMETER (in): 4 POC (ft): 8 LENGTH (ft): 8

POINT OF WELL (SILT SUMP) – NA

TYPE: _____ BSC (ft): _____ POW(ft): _____

GROUT

TYPE: Cement/Bent TG (ft): 0 LENGTH (ft): 32

SEAL

TYPE: Bent chips TBS (ft): 32 LENGTH (ft): ~~5~~

SAND PACK

FINE SAND TYPE: Morie #00 TSP (ft): 37 LENGTH (ft): 2

COARSE SAND TYPE: Morie #0 TSP (ft): 39 LENGTH (ft): 42

ACRONYMS

TR	Top of Riser	BSC	Bottom of Screen	TG	Top of Grout
TSC	Top of Screen	POW	Point of Well	TBS	Top of Bentonite Seal
BGD	Background	TSP	Top of Sand Pack		

COMMENTS: (1) No water used for drilling

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

(1) Outer casing was set into competent rock at 8' bgs and acts as a protective casing

(2) Riser extends 2' above surface

(3)

(4) Centralizer (39'-40')

(5) see note on core boring report about water in well and screen setting.

CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW25-310	1

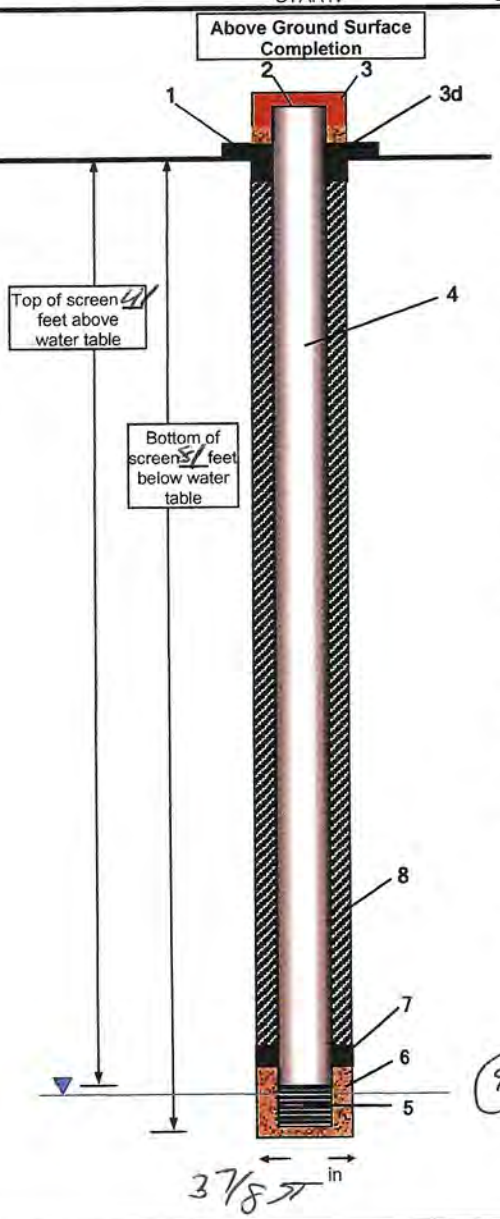
~~Project Name~~

Seneca Army Depot
Romulus, NY
Ordinance Road
SEAD-25

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY
LOCATION: Ordinance Road - SEAD 25
DRILLING SUBCONTRACTOR: NYSDOT
DRILLER: J. Ranscht
DRILLING METHOD / EQUIPMENT: ATV, air-hammer
HELPERS: M. Trevett
WATER LEVEL: START: END:
GEOLOGIST: E. Ashton



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: 2'
- c) length below ground: 41'
- d) type / quantity of sealant: —
- e) well centralizers: 39-40'

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-in
- c) length: 40'

6- Well screen filter pack :
- a) type: Morie #00, Morie #0
- b) length: 2, 42

7- Bentonite seal :
- a) method of placement: free pour from surface
- b) type: Chips
- c) length: 5'

8- Grout :
- a) type: Type I
- b) grout mix: cement / bent.
- c) method of placement: Tremie
- d) depth (feet bgs): 0-32'

(9) outer Casing
- 0-8' bgs
- grouted in place
- steel drill Casing (4-in dia)
- Type I grout (cement (bent.))

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW25-310

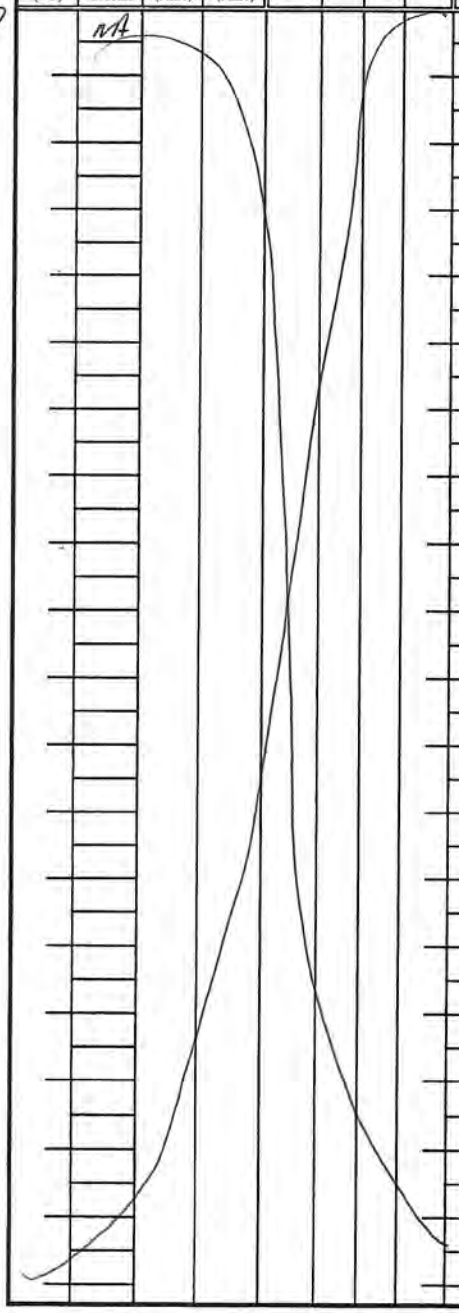
COMMENTS: (1) Roller bit w/ water.

DRILLER: J. Rauscha (MYEG)

INSPECTOR: E. Ashta (Parsons)

DATE: 6-30-20

DEPTH (Ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0	NA							* See log for MW25-315 for lithology for well.* - Roller bit w/ water to 8' bgs and set drill casing and grouted in place. - Lost approximately 10 gals of water during installation to formation. - Installed casing into competent rock	NA	NA
8'										



CORE BORING REPORT

PARSONS	CLIENT: USACOE	BORING #: MW25-310

PROJECT: Seneca Army Depot
SWMU # (AREA): Ordnance Road, SEAD-25
SOP NO.: —

DATE CORING STARTED: 7-2-20
DATE CORING COMPLETED: 7-2-20
CONTRACTOR: MEG / Parsons
DRILLER: J. Ranschau (MEG)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST: "
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: —
OVERBURDEN THICKNESS: —
GALLONS OF WATER USED

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
PID in WP Pan 3 cm PPB	5'	0.0 ppm	0840

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
AH	—	continuous	3 7/8"	NA

COMMENTS: - air-hammer bucket

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
8'	NA	NA	0.0 ppm	NA	NA	NA	- start to drill in competent rock at 28" bgs. - Air-hammer, as approved by USACOE. - NO water used. - soil cuttings dry from 8'-17' bgs. shale - minor wetness at 17' bgs, soil cuttings, shale, then dry again to 21' bgs. - minor wetness at 21' bgs, soil cuttings, shale - minor zone of wetness observed from 21'-36' bgs, soil cuttings, shale - stopped drilling at 36' bgs and allow if any water to accumulate in borehole and then pumped out w/ rig to see if water present - had wet piezometer

INVESTIGATION DERIVED WASTE: - NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION		that micro fractures exist and water produces, water in borehole during installation was between 43 - 63' bgs	

- soil cuttings, shale, still fairly dry at 51' bgs. will drill to 56' bgs. minor zone of wetness, nothing significant.
- Dry at 56' bgs and drilled to 81' bgs. cuttings still dry. Drillers do not have enough rods to drill deeper. Discussed w/ Parsons (Monty Parr/Todd Belanger) and it was decided to install well w/ 40' of screen (41'-81') in hopes

7-2-20 Sunny - 80's

EDA, AC, DRO, MEG

0655 EDA; DRO onsite

0700 AC; MEG on site

0710 Hold safety tailgate meeting. Cover items listed on meeting form.

Temps

EDA = 97.6°F

AC = 95.6°F

DRO = 96.0°F

JR = 95.5°F

MT = 95.9°F

0725 meeting completed; teams rech to work areas.

- AC: DRO continue development at OD Grounds
  - review of development procedures w/ team from yesterday.
- MEG drill MW25-31D
- PID calibrated-ok

0820 start to air-hammer at MW 25-31D.

1215 Port-a-John company onsite to service unit

1230 offsite - Port-a-John company.

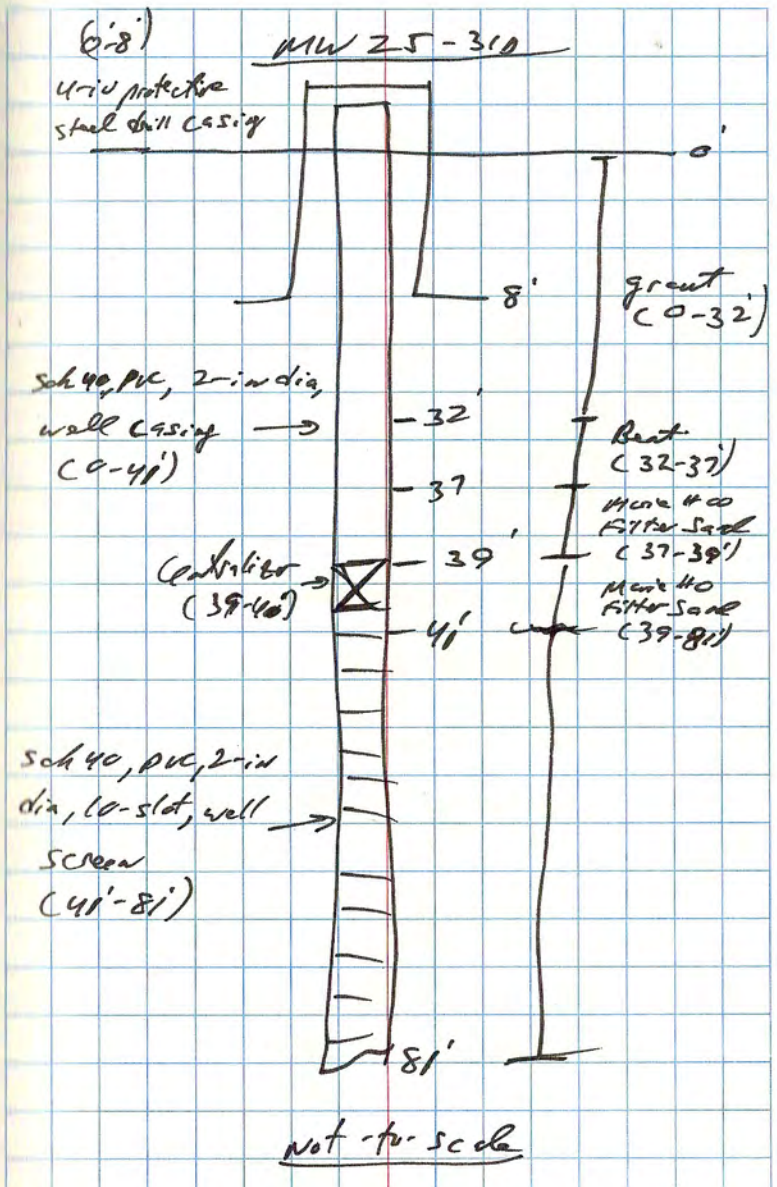
1244 Air-hammered to 81' bgs and no significant water zone, basically dry between 37'-81' bgs. Some minor water zones within above competent rock ~37' bgs. Spoke to TB and informed him that driller cannot go deeper than 81' because not enough rods, would have to get more. We discussed and it was decided to install well from 41-81' and pump dry on 7-6-20 to remove any water in well and see if it recharges. Any water that comes in would

be from screen at 8 ore.
If no water present, then potential deeper well will have to be installed and original well will have to be abandoned.
Asked drillers to bring 20' of more rods for next week

1300 Start to install MW25-310.

* Note:
- Installed only 2' of bent and will complete once (when, if well will stay or be abandoned

1330 MEG offside.



OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW-2.5-32
COMMENTS: 1) Drill with an ATV based CME 550 rig 2) Sample with Split Spoon		DRILLER: S. Bodam INSPECTOR: A. Cook DATE: 6/24/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	13 17 21 14	2'	1.25'	NA	NA	0.0	NA	0-.6 Dry. Grey. fine GRAVEL (Crushed rock) w/ some Silt. no odor or staining. Stiff .6-1.25 Dry. Grey-Dark Grey. WEATHERED/ Broken SHALE. with little Silt. no odor or staining. Very Stiff.	GM GW	NA
2-4	10 6 24 50/4	22"	8" 2"	NA	NA	0.0	NA	2-2.2. Dry. Grey. SILT with some fine Gravel (Crushed rock) and little clay. no odor or staining. Hard.	ML	
4-6	5 11 50/3	15"	4"	NA	NA	0.0	NA	4.6 4-4.6 Dry. mottled Grey, Brown, Orange. SILT with little fine gravel and clay. no odor. Some Iron staining throughout. Stiff. + Trace coarse gravel (Siltstone?)	ML	
						0.0		4.6-5 Dry. Grey. WEATHERED/Rock, with Silt. no odor or staining. Very dense.	GW	
								Competent Rock - 6.5 Void At		
								Well construction 14-4 Screen 14-3 Sand 3-1 Bentonite 1-0 Grout		

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW-25-32

PROJECT: Seneca Army Depot
LOCATION: SEAD 25

PROJECT NO: 74964.08000
INSPECTOR: A. Cook
CHECKED BY: _____

DRILLING CONTRACTOR: NYEG
DRILLER: S. Boden
DRILLING COMPLETED: 6/24/20
BORING DEPTH: _____
DRILLING METHOD(S): HSA + Air-Rotary
BORING DIAMETER(S): 4' 3.25"
ASSOCIATED SWMU/AOC: _____

POW DEPTH: _____
INSTALLATION STARTED: 6/24/20
INSTALLATION COMPLETED: 6/24/20
SURFACE COMPLETION DATE: _____
COMPLETION CONTRACTOR/CREW: _____
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION: _____

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5" LENGTH: 5' TOR: -

RISER:
TOC: See note (1) TYPE: PVC DIAMETER: 2" LENGTH: 7'6.5'

SCREEN:
TSC: _____ TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-14

POINT OF WELL: (SILT SUMP)
YPE: _____ BSC: _____ POW: _____

GROUT:
TG: Surface TYPE: Type I Grout/Cement LENGTH: 2'1'

SEAL: TBS: 1 TYPE: Bent. Chips LENGTH: 1'2'

SAND PACK: TSP: 3 TYPE: morie #0 LENGTH: 11'

SURFACE COLLAR:
TYPE: _____ RADIUS: _____ THICKNESS CENTER: _____ THICKNESS EDGE: _____

CENTRALIZER DEPTHS
DEPTH 1: _____ DEPTH 2: _____ DEPTH 3: _____ DEPTH 4: _____

COMMENTS:
1) Riser is BGS: 4 AGS: 2.5 Total: 16.5

*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

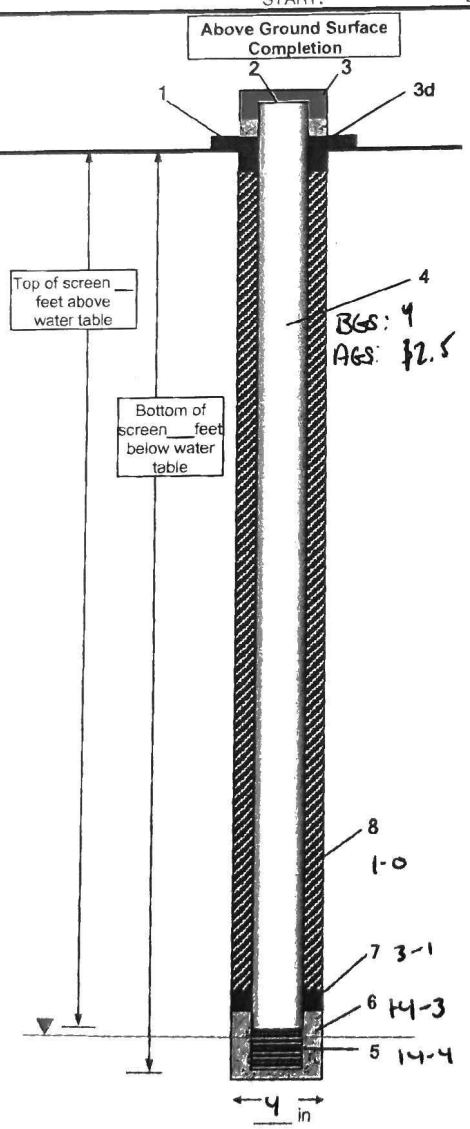
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW-25-32	1

~~Project Name~~ Seneca Army Depot. Romulus NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot
DRILLING SUBCONTRACTOR: NYEG
DRILLING METHOD / EQUIPMENT: HSA + Air rotary
WATER LEVEL: START: END:
LOCATION: SEAD 25
DRILLER: S. Bodem
HELPERS: A. Skinner
GEOLOGIST: A. Cook



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC 12"
- b) height above ground: 3' 2.5'
- c) length below ground: 4'
- d) type / quantity of sealant: -
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC 12"
- b) slot size: 10-4
- c) length: 10'

6- Well screen filter pack :
- a) type: morie #0
- b) length: 12'-11'

7- Bentonite seal :
- a) method of placement: Pour from surface
- b) type: Bent. Chips
- c) length: 3-1

8- Grout :
- a) type: Type I
- b) grout mix: Grout/cement
- c) method of placement: Pour from surface
- d) depth (feet bgs): 0-1

BEDROCK MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW 25-320

PROJECT:	Seneca Army Depot	PROJECT NO:	749674.08000
SWMU # (AREA):	SEAD-25	INSPECTOR:	E. Ashton (Parsons)
SOP NO.:		CHECKED BY:	

DRILLING CONTRACTOR:	NYEG	POW DEPTH (ft):	79'
DRILLER:	J. Ranscher	INSTALLATION STARTED:	7-8-20
DRILLING COMPLETED:	7-8-20	INSTALLATION COMPLETED:	
BORING DEPTH:	79'	SURFACE COMPLETION DATE:	
DRILLING METHOD(S):	air-hammer	COMPLETION CONTRACTOR/CREW:	NYEG
BORING DIAMETER(S):	3 7/8"	BEDROCK CONFIRMED (Y/N?)	Y

PROTECTIVE SURFACE CASING – NA

DIAMETER (ft): _____ LENGTH (ft): _____

RISER

TYPE: PVC TR (ft): 0 (2)

DIAMETER(in): 2 LENGTH (ft): 40.9 ~~41.5~~ (2)

SURFACE COLLAR

TYPE: _____ RADIUS (ft): _____

THICKNESS OF CENTER (ft): _____ THICKNESS OF EDGE (in): _____

SCREEN

TYPE: PVC TSC (ft): 39

DIAMETER (in): 2 SLOT SIZE: 10-in LENGTH (ft): 40

OUTER CASING

TYPE: steel drill casing TC (ft): 0 (1)

DIAMETER (in): 4 POC (ft): 8 LENGTH (ft): 8

POINT OF WELL (SILT SUMP) – NA

TYPE: _____ BSC (ft): _____ POW(ft): _____

GROUT

TYPE: Cement/Bent. TG (ft): ~~35~~ 0 LENGTH (ft): 30'

SEAL

TYPE: Bentchips TBS (ft): 30 LENGTH (ft): 5

SAND PACK

FINE SAND TYPE: Morie #00 TSP (ft): 35 LENGTH (ft): 2

COARSE SAND TYPE: Morie #0 TSP (ft): 37 LENGTH (ft): 42

ACRONYMS

TR	Top of Riser	BSC	Bottom of Screen	TG	Top of Grout
TSC	Top of Screen	POW	Point of Well	TBS	Top of Bentonite Seal
BGD	Background	TSP	Top of Sand Pack		

COMMENTS: (1.) no water used for drilling. Added some water to clean out borehole, but all was recovered

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

(1.) Outer casing was set into competent rock at 8' bgs and acts as a protective casing

(2.) Riser extends 1.9' above surface

(3)

(4.) Centralizer @ 37.38')

(5.) See note on core boring regarding absent water in borehole and screen setting.

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW26-320
COMMENTS: (1) Roller bit w/ water	DRILLER: J. Rauscher (MWEG)	
	INSPECTOR: E. Hilton (Parsons)	
	DATE: 7-7-20	

DEPTH (Ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0	NA							* see log of MW25-16 for lithology for well. *	NA	NA
								- Roller bit w/ water to 8' SP and set drill casing and grouted in place		
								- no significant water lost to formation during installation of drill casing.		
								- installed casing into competent rock		
8'										

CORE BORING REPORT

PARSONS	CLIENT: USACOE	BORING #: MW 26-320

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

DATE CORING STARTED: 7-8-20
DATE CORING COMPLETED: 7-8-20
CONTRACTOR: MEG / Parsons
DRILLER: J. Rauscher (MEG)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST: " "
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED:
OVERBURDEN THICKNESS:
GALLONS OF WATER USED

MONITORING

INSTRUMENT	INTERVAL	BACKGROUND	TIME
M.W. Pad 3 ow PID	5'	0.0ppm	0915

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
AH	—	Continuous	3 7/8"	NA

COMMENTS:
- air-hammered borehole.

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,INT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
8'	NA	NA	0.0 ppm	NA	NA	NA	- start to drill in competent rock at 8' bgs. - AV - hammered, as approved by USACOE. - no water used - soil cuttings dry from 8-40 bgs - shale - minor wet zone at 41' bgs, then dry again. - shale - 42 to 71' bgs - dry from soil cuttings. - shale. ~~- stopped drilling at 71' bgs and left borehole~~ - stopped drilling at 71' bgs, waited for ~~a~~ cut to see if water came into borehole. Blew out borehole and little water blew out cut. Decide to drill to 79.0 and install 40ft of well screen from 39.0-79.0 bgs. Catching water zone at 41' bgs & any other zones deeper. Also want to set some & cut water zone. Same logic as for MW 25-319. - add water to borehole to clear out cuttings, renewed all water in system. - 71-79', soil cuttings dry. - shale.
~~19.0~~ 79.0'							

INVESTIGATION DERIVED WASTE: — NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

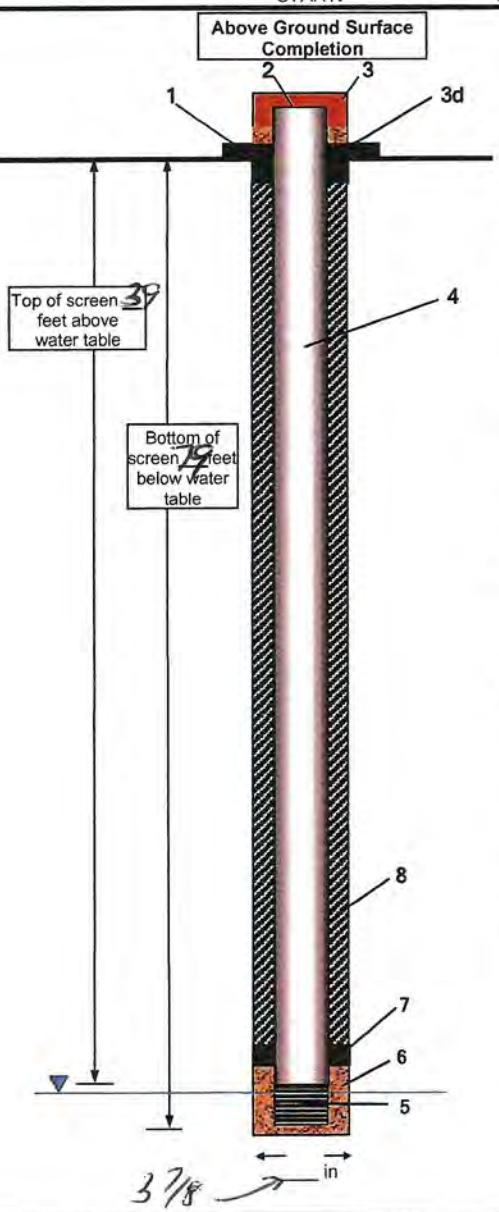
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW25-320	1

~~Project Name~~ Seneca Army Depot Romulus, NY

Location **Groundwater Monitoring Well** SEAD 25

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY
LOCATION: SEAD 25
DRILLING SUBCONTRACTOR: NYEC
DRILLER: J. Ranscher
DRILLING METHOD / EQUIPMENT: ATV: air-hammer
HELPERS: A. Skinner
WATER LEVEL: START: END:
GEOLOGIST: E. Asleson



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing : _____
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: 1.9'
- c) length below ground: 39'
- d) type / quantity of sealant: —
- e) well centralizers: ~~37-38~~ 37-38'

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-in
- c) length: 40'

6- Well screen filter pack :
- a) type: Morie #00, Morie #0
- b) length: 2', 42'

7- Bentonite seal :
- a) method of placement: free pour from surface
- b) type: chips
- c) length: 5'

8- Grout :
- a) type: Type I
- b) grout mix: cement/bent.
- c) method of placement: tremie
- d) depth (feet bgs): 0-30'

(9) outer casing
- 08' SP
- grouted in place.
- steel drill casing (4-in dia)
- Type I grout (cement/bent).

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW-25-33
COMMENTS: 1) Drill with an ATV CME 850 rig 2) Sample 4SS		DRILLER: S. Bodem INSPECTOR: A Cook DATE: 6/24/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	3 4 10 18	2'	1.75'	NA	NA	0.0	NA	0 - 1.75' Dry Tan - Grey, SILT with little fine Gravel, trace medium gravel and clay, no odor some iron staining trace organics (roots) Stiff.	ML	
								1.75 - 3.75 slightly moist SILT with little clay, and fine gravel, trace medium gravel and fine Sand. no odor or staining. stiff	ML	
2-4'	8 8 8 15	2'	1.75'	NA	NA	0.4	NA			
4-6'	7 20 50/1	13"	13"	NA	NA	0.0	NA	4 - 4.7 slightly moist - moist. Brown SILT with little clay. no odor or staining fine gravel (Till) Very stiff.	ML	
								4.7 - 5.1 Dry, Grey, WEATHERED SHALE with some silt, no odor or staining. Hard.	GM	
6-8'								Auger refusal @ 5.5'		
								Competent rock - 6.5'		
								Well construction		
								14-4 Screen		
								14-3 Sand		
								3-1 Bentonite		
								1-0 Grout		
								4 - 2.5 Riser		
								8-10' clean, wet rock is coming out of auger less dust is being created. Water is coming out of hole (muddy) continued through 14'		

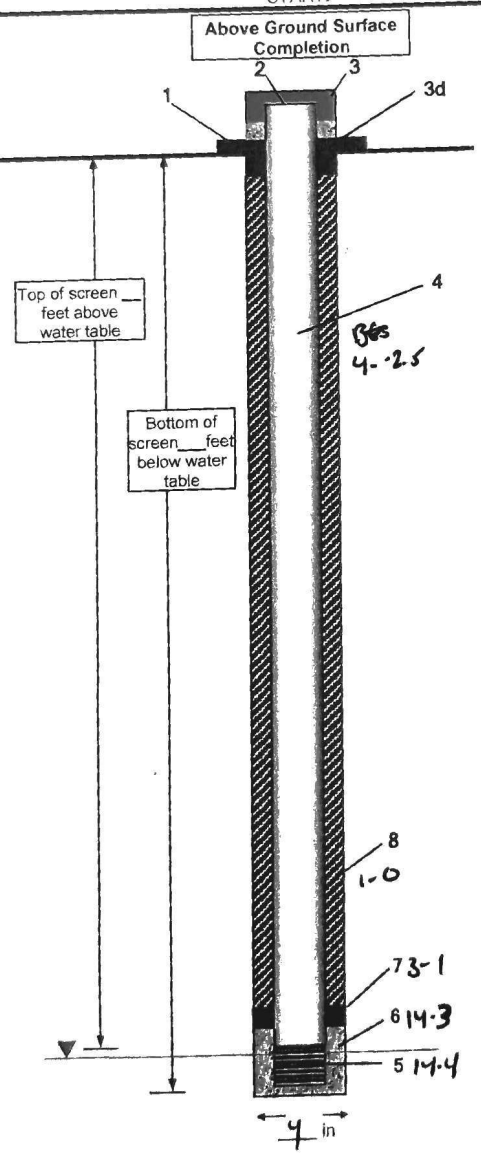
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW-25-33	1

~~Project Name~~ Seneca Army Depot, Romulus NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot
LOCATION: SEAD 25
DRILLING SUBCONTRACTOR: NYEG
DRILLER: S. Bodem
DRILLING METHOD / EQUIPMENT: HSA + Air rotary
HELPERS: A Skinner
WATER LEVEL: START: END:
GEOLOGIST: A Lee



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC 12"
- b) height above ground: 2.5
- c) length below ground: 4
- d) type / quantity of sealant: -
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC 12"
- b) slot size: 10-14
- c) length: 10'

6- Well screen filter pack :
- a) type: Morie #0
- b) length: 11'

7- Bentonite seal :
- a) method of placement: Pour from surface
- b) type: Bent. Chips
- c) length: 2'

8- Grout :
- a) type: Type I
- b) grout mix: Grout/Cement
- c) method of placement: Pour from Surface
- d) depth (feet bgs): 1'

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW-25-33

PROJECT: Seneca Army Depot
LOCATION: SEAD 25

PROJECT NO: 749674.08080
INSPECTOR: A. Cook
CHECKED BY: _____

DRILLING CONTRACTOR: NYEG
DRILLER: S. Badam
DRILLING COMPLETED: 6/24/20
BORING DEPTH: _____
DRILLING METHOD(S): HSA + Air-rotary
BORING DIAMETER(S): 4" 3.25"
ASSOCIATED SWMU/AOC: _____

POW DEPTH: _____
INSTALLATION STARTED: 6/24/20
INSTALLATION COMPLETED: 6/24/20
SURFACE COMPLETION DATE: _____
COMPLETION CONTRACTOR/CREW: _____
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION: _____

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5" LENGTH: 5' TOR: -

RISER:
TOC: _____ TYPE: PVC DIAMETER: 2" LENGTH: 6.5'

SCREEN:
TSC: _____ TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-slot

POINT OF WELL: (SILT SUMP)
YPE: _____ BSC: _____ POW: _____

GROUT:
TG: Surface TYPE: Type I Grout/cement LENGTH: 1'

SEAL: TBS: 1 TYPE: Bent. chips LENGTH: 2'

SAND PACK: TSP: 3 TYPE: Morie #0 LENGTH: 11'

SURFACE COLLAR:
TYPE: _____ RADIUS: _____ THICKNESS CENTER: _____ THICKNESS EDGE: _____

CENTRALIZER DEPTHS
DEPTH 1: _____ DEPTH 2: _____ DEPTH 3: _____ DEPTH 4: _____

COMMENTS:
1) Riser is BGS: 4 AGS: 2.5' Total: 6.5'

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW-25-33

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 25
SOP NO.:

START DATE: 6/24/20
FINISH DATE: 6/24/20
CONTRACTOR: NYEG
DRILLER: S. Bodem
INSPECTOR: A Cook
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4"	0 -	2"x2'	SS	HHR	140 / 30
air rotary	3.25"	-				

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
multirae	VOC	-	0.0	1415	6/24/20	0730	6/24/20	70's partly cloudy

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE - NA

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
1) No water added

SAMPLES TAKEN: - NA

SAMPLES	
DUPLICATES	
MS/MSD	
MRD	

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW 25-345
PROJECT: Seneca Army Depot		PROJECT NO: 749674.08000
LOCATION: Fayette Road		INSPECTOR: E Ashton (Pass mtg)
		CHECKED BY:

DRILLING CONTRACTOR:	NYEG	POW DEPTH:	16'
DRILLER:	J. Ranscher	INSTALLATION STARTED:	6-25-20
DRILLING COMPLETED:	6-25-20	INSTALLATION COMPLETED:	6-25-20
BORING DEPTH:	16'	SURFACE COMPLETION DATE:	
DRILLING METHOD(S):	Roller bit w/ water + split spoon	COMPLETION CONTRACTOR/CREW:	NYEG
BORING DIAMETER(S):	3 7/8"	BEDROCK CONFIRMED (Y/N?)	Y
ASSOCIATED SWMU/AOC:	-	ESTIMATED GROUND ELEVATION:	

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5 LENGTH: 5 TOR: -

RISER:
TOC: see note (1) TYPE: PVC DIAMETER: 2" LENGTH: 6 (1)

SCREEN:
TSC: 6 TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-slot

POINT OF WELL: (SILT SUMP) - NA
YPE: BSC: POW:

GROUT:
TG: surface TYPE: Type I (cement/bent) LENGTH: 2'

SEAL: TBS: 2' TYPE: Bentchips LENGTH: 2'

SAND PACK: TSP: 4' TYPE: #2 morie LENGTH: 12'

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS - NA
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
(1) Riser is from 0-6' bgs w/ 2.5' riser above ground. Total length is 8.5'
(2) No significant water lost to formation during drilling.

*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

(3) Protective casing
(4) No choker sand used because of shallow depth

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW25-3~~4~~5

PROJECT: Seneca Army Depot
SWMU # (AREA): Fayette Rebel
SOP NO.:

START DATE: 6-25-20
FINISH DATE: 6-25-20
CONTRACTOR: MACTEC / Parsons
DRILLER: J. Ramscher
INSPECTOR: E. Ashton
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA. (in)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
RB	3 7/8	0-16	2"x2"	SS	HHR	140lbs / 30in

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRae 3000	PID	—	0.0 ppm	0830	6-25-20	0730	6-25-20	Sunny - ~~80's~~ 70's

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE — NA

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:

(1) RB and split spoon for sampling
(2) No chalker sand used because of shallow depth
(3) No significant water lost to formation during drilling

SAMPLES TAKEN: — NA

SAMPLES
DUPLICATES
MS/MSD
MRD

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW25-345

COMMENTS:
1) Roller bit, water, split spoon
2) WS = weathered Shale
3) CR = competent Rock
APPROVED

DRILLER: J. Ramsden (MEG)
INSPECTOR: E. Ashton (Parsons)
DATE: 6-25-20

DEPTH (ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0	3	0.0	16	NA	NA	NA	NA	(0-2) dry, med. stiff, brown, SILT, some clay, little organic roots in top inch, low plasticity, no odor or stains - PID	ML	
	4									
	3									
2'	6									
	7	0.0	16							
	8									
	10							(2-4') dry, very stiff, brown, SILT, some clay, little f-m sand, low plasticity, no odor or stains - PID	ML	
	8									
4'	4	0.0	18							
	6									
	12									
	16							(4-6') = wet, med. dense, brown, F-M SAND, some silt, little f-m gravel, no odor or stains.	SM	
6'	25	0.0	19							
	50/.5									
	-									
	-							(6'-6.11') wet, hard, brown, SILT, some f-m sand, little clay, f-m gravel, weather shale at end of spoon, no stains or odors - (PID). Spoon refusal at 6.11' sp. Drill to 8' Sp.		
8	50/.2	0.0	1							
	-	0.0								
	-								WS	
10'	-	NA	NA						ML/SM	
	NA									
								(8-8.2) = spoon refusal at 8.2' Sp WEATHERED SHALE (WS) Roller bit to competent rock (top).		
									CR	
								- 8.8' Sp. competent rock. Drilling to 16' Sp. so 10' of screen can be installed and still cover.		
								- no chaser sand used due to shallow depth of well.		
								- no significant water loss to formation during drilling		
16'										

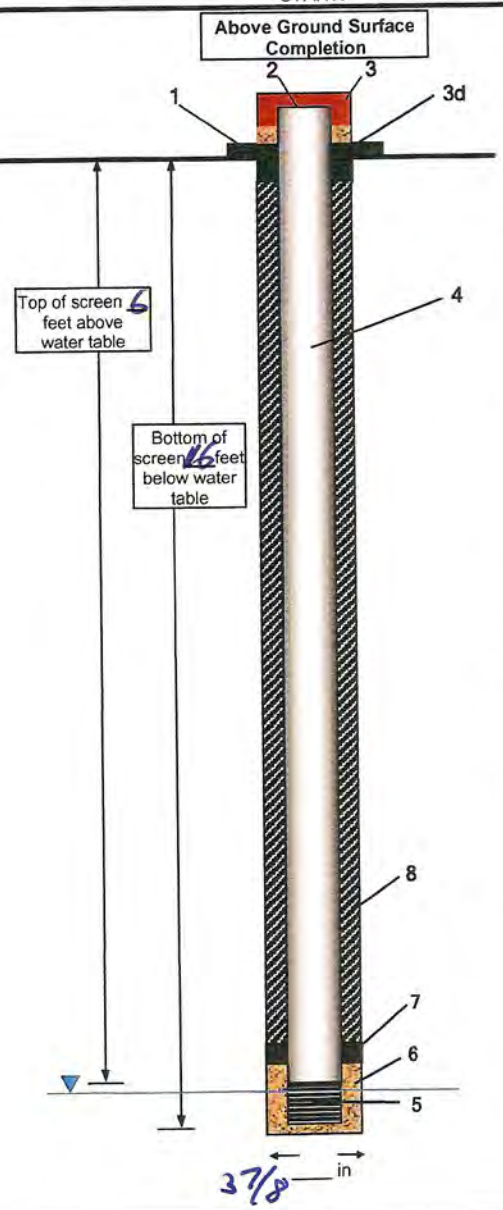
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW25-34S	1

~~Project Name~~ Seneca Army Depot Romulus, NY

Location Groundwater Monitoring Well — Fayette Road

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY
LOCATION: Fayette Road
DRILLING SUBCONTRACTOR: Nyes
DRILLER: J. Rauscher
DRILLING METHOD / EQUIPMENT: ATV, roller bit w/ water, split spoon
HELPERS: M. Trevett
WATER LEVEL: START: END:
GEOLOGIST: B. Ashton



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: 2.5
- c) length below ground: 6
- d) type / quantity of sealant: -
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-slot
- c) length: 10'

6- Well screen filter pack :
- a) type: Morie #0
- b) length: 12'

7- Bentonite seal :
- a) method of placement: pour from surface
- b) type: chips
- c) length: 2'

8- Grout :
- a) type: Type I cement / bent
- b) grout mix
- c) method of placement: pour from surface
- d) depth (feet bgs): 2'

BEDROCK MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW 25 - 34D

PROJECT:	Seneca Army Depot	PROJECT NO:	749674.08000
SWMU # (AREA):	Fayette Road	INSPECTOR:	E. Ashton (Parsons)
SOP NO.:	—	CHECKED BY:	

DRILLING CONTRACTOR:	NYBG	POW DEPTH (ft):	54'
DRILLER:	J. Ranischer	INSTALLATION STARTED:	6-25-20
DRILLING COMPLETED:	6-26-20	INSTALLATION COMPLETED:	6-26-20
BORING DEPTH:	54'	SURFACE COMPLETION DATE:	
DRILLING METHOD(S):	Air-Hammer	COMPLETION CONTRACTOR/CREW:	NYBG
BORING DIAMETER(S):	3 7/8"	BEDROCK CONFIRMED (Y/N?)	Y

PROTECTIVE SURFACE CASING — NA

DIAMETER (ft): _____ LENGTH (ft): _____

RISER

TYPE: PVC TR (ft): 0 (2)

DIAMETER(in): 2 LENGTH (ft): 46 (2)

SURFACE COLLAR

TYPE: _____ RADIUS (ft): _____

THICKNESS OF CENTER (ft): _____ THICKNESS OF EDGE (in): _____

SCREEN

TYPE: PVC TSC (ft): 44

DIAMETER (in): 2 SLOT SIZE: 10-in LENGTH (ft): 10

OUTER CASING

TYPE: Steel drill casing TC (ft): 0 (1)

DIAMETER (in): 4 POC (ft): 18 LENGTH (ft): 18 (1)

POINT OF WELL (SILT SUMP) — NA

TYPE: _____ BSC (ft): _____ POW(ft): _____

GROUT

TYPE: Cement/bent TG (ft): 0 LENGTH (ft): 35

SEAL

TYPE: Bent. chips TBS (ft): 35 LENGTH (ft): 5

SAND PACK

FINE SAND TYPE: Morie #00 TSP (ft): 40 LENGTH (ft): 2

COARSE SAND TYPE: Morie #0 TSP (ft): 42 LENGTH (ft): 12

ACRONYMS

TR	Top of Riser	BSC	Bottom of Screen	TG	Top of Grout
TSC	Top of Screen	POW	Point of Well	TBS	Top of Bentonite Seal
BGD	Background	TSP	Top of Sand Pack		

COMMENTS:

(1.) No water used for drilling

(2)

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

(1.) Outer casing was set into competent rock at 18' SP and acts as a protective casing.

(2.) Riser extends 2' above surface

(3)

(4) Centralizer (42-43')

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACE	BORING NO.: MW25-340
COMMENTS:		DRILLER: J. Ranscher (AMEC)
		INSPECTOR: E. Ashton (Parsons)
		DATE: 6-25-20

DEPTH (Ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0'	NA							* See log for #MW25-345 for lithology to 16' bgs. * - Roller bit to 18' bgs w/ water. - Set 4" nom. dia. steel drill casing to 18' bgs and grouted in-place. - No significant water lost to formation during drilling.	NA	NA
18'										

page 1 of 1

CORE BORING REPORT

PARSONS	CLIENT: USACOE	BORING #: MW25-340

PROJECT: Seneca Army Depot
SWMU # (AREA): Fayette Road
SOP NO.:

DATE CORING STARTED: 6-26-20
DATE CORING COMPLETED: 6-26-20
CONTRACTOR: NYSDOT / Parsons
DRILLER: J. Ranscher (NYSDOT)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST: "
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED:
OVERBURDEN THICKNESS:
GALLONS OF WATER USED: —

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
MiniRae 2000 PID	5'	0-0 ppm	0830

COMMENTS: Air-hammered borehole

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
AH	-	continuous	3 7/8"	NA

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
18'	NA	NA	NA	NA		NA	- Start to drill in competent rock at ~ 18' bgs - air-hammered, as approved by USACOE. - no water used - rock cuttings shale ~ 18-38', dry. - wet cuttings at 38' bgs shale. - wet cuttings at 54' bgs stopped borehole. - will construct well from 44-54' bgs to get water bearing zone below 30' of competent rock and seal off so no water affects lower regions.
54'							

INVESTIGATION DERIVED WASTE: — NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

5/20/2005

CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW25-340	1

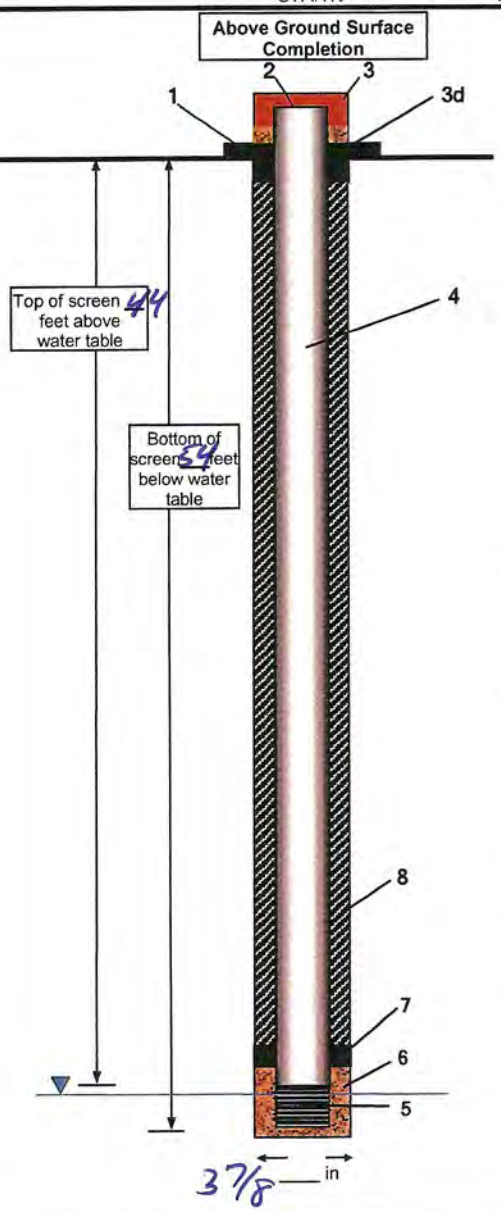
~~Project Name~~ Seneca Army Depot Romulus, NY

Location Groundwater Monitoring Well Fayette Road

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY
DRILLING SUBCONTRACTOR: NYEG
DRILLING METHOD / EQUIPMENT: ATV & air-hammer
WATER LEVEL: START: END:

LOCATION: Fayette Road
DRILLER: J. Ranscht
HELPERS: M. Trevett
GEOLOGIST: E. Ashton



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: 2'
- c) length below ground: 44'
- d) type / quantity of sealant: —
- e) well centralizers: 42-43'

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-in
- c) length: 10'

6- Well screen filter pack :
- a) type: Morie #00 , Morie #0
- b) length: 2' , 12'

7- Bentonite seal :
- a) method of placement: Free pour from surface
- b) type: chips
- c) length: 5'

8- Grout :
- a) type: Type I
- b) grout mix: cement / bent.
- c) method of placement: Tremie
- d) depth (feet bgs): 0-35'

(9) outer casing:
- 0-18' bgs
- grouted in-place
- steel drill casing (4-N dia)
- Type I grout (cement/bent)

SEAD-26 Boring Logs

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 26-02

PROJECT: Seneca Lake Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 5/14/19
FINISH DATE: 5/14/19
CONTRACTOR: Parratt-Wolff
DRILLER: Mark Eaves
INSPECTOR: ALE
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2"	SS	HMR	140

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRAE 3000	VOC		0.0 ppm	1245	5/14/19	0910	5/14/19	40s Rain

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	5/14/19		
SOIL AMOUNT: (fraction of drum)	—		
DRUM #, LOCATION:	—		

COMMENTS:
Used a Dietrich Rig w/ 5' x 5" augers, split spoon sampler, and air-hammer

SAMPLES TAKEN:

SAMPLES	—
DUPLICATES	—
MS/MSD	—
MRD	—

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 26-12
COMMENTS: Bedrock (weathered shale) first appeared at ~8.5' with auger refusal at 10', advanced to 13' using air hammer. Competent bedrock was not seen but below 10'.		DRILLER: Mark Eckes INSPECTOR: Ave DATE: 5/14/19

DEPTH (FT)	SAMPLING BLOWS PER 6 INCHES	SAMPLING PENETRATION RANGE (FEET)	SAMPLING RECOVERY RANGE (FEET)	SAMPLE DEPTH INT (FEET)	SAMPLE NO	SAMPLE VOC	SAMPLE RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	NA / NA	NA	NA	NA				Asphalt + Concrete, Delayed drilling on cold access road	NA	
4'	12-8 / 5-5	2'	0.5'	1.5		0.1		Top 6" Dry, medium Dense Grey GRAVEL F-C (Concrete). no odor Bottom 8" Moist, Medium stiff, Brown SILT w/ fine sand, F gravel	ML	
6'	2-6 / 4-17	2'	1'	1'		0.0	4	Moist-wet, loose, Brown fine SAND w/ fine to coarse Gravel and silt	SM	
8'	50/4	4"	4"			0.0		Top 2" SAA Top 4", medium weathered SHALE Bottom 1' Bottom 2" Grey. Hard	GM	
10'	40-50/1	8"/4"	6"	6'		0.3		Dry, very Dense, Grey SHALE (weathered Bedrock) w/ fine silt, no odor	GM	

Well Construction:

PVC Screen 13-5'

Filter Sand 13-3'

(Bellmore, Natural Sand. B) ~4bags

Bentonite 3-1'

(crumbles, medium)

DTB: 13.2'

DTW: 11.17'

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** | **BORING NO.:** 26-13

PROJECT: Seneca Lake Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 5/13/19
FINISH DATE: 5/13/19
CONTRACTOR: Perratt Wolff
DRILLER: Mark Eaves
INSPECTOR: LMO
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2'	SS	HMR	140
Air hammer	5"	-	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRAE 3000	ppm		0.0 ppm	0916	5/13/19	0916	5/13/19	40's Rain Cloudy

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	5/13/19		
SOIL AMOUNT: (fraction of drum)	-		
DRUM #, LOCATION:	-		

COMMENTS:
Used a Dietech drill rig with 5" augers and split spoon, then air hammer.

SAMPLES TAKEN:

SAMPLES	-
DUPLICATES	-
MS/MSD	-
MRD	

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 26-13
COMMENTS: Auger to 10' then refusal @ weathered bedrock advance to 12' w/ air-hammer, last SS @ 8-10'. Overburden 5.5-10'. Sat let well sit for ~3 min, w/ 1.5' of water, put in screen		DRILLER: Mark INSPECTOR: Ave DATE: 5/13/19

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	?	2'	1'	1'		0.0		Slightly moist-moist, Brown-grey, GRAVEL (f-c), w/ Silt, and little fine sand, coarsening downwards, no odor	GM	
4'		2'	1'	1'		NA		Moist-very moist, Brown-grey, ~~SAND~~ SILT with f-c Gravel, trace clay, no odor, some organic stains	~~GM~~ ML	
20-13 6'	6-6 / 30 ~~(?)~~	2'	3"	3"		NA		Moist-very moist, Brown-Grey, SILT with fine & coarse gravel, trace clay no odor + stains	ML	
8'	60-11 / 33-41	2'	.75'	.75'		NA		Moist, Hard, Brown, SILT with fine Gravel, little fine sand, trace clay, coarsening downwards, no odor	ML	
10'	50/5	5'				NA 0.0		Slightly moist, Hard, Brown-Grey, GRAVEL (coarse) (include (b.r.)) w/ silt, trace clay no odor	GM	

Well Construction:

PVC Screen 13-5'

Filter sand 13-3'

(Bellmore, Natural Sand, B)

Bentonite 3-1'

(enviroplug, medium)

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 26-14

PROJECT: Seneca Lake Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 5/14/19
FINISH DATE: 5/14/19
CONTRACTOR: Parratt Wolff
DRILLER: Mark Fowler
INSPECTOR: AWC
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2'	SS	HMR	140
Air-Hammer	5"	-	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRAE 3000	VOC		0.0ppm	0940	5/14/19	0940	5/14/19	42, Rainy

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	5/14/19		
SOIL AMOUNT : (fraction of drum)	-		
DRUM #, LOCATION:	-		

COMMENTS:
Used a Diedrich Rig with 5" hsa augers and 2' SS, the ~~air hammer was not used~~
AC

SAMPLES TAKEN:

SAMPLES	-
DUPLICATES	-
MS/MSD	-
MRD	-

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 26-14
COMMENTS: Never hit competent bedrock, augered 1 SS Sample until 14' then augered to 15'. 12-14' was Weathered Shale, above this was very moist soft Soil.		DRILLER: Mark Ecker INSPECTOR: AVE DATE: 5/14/14

DEPTH (FEET)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INTERVAL (FEET)	SAMPLE: SCI	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	4-7 7-6	2'	1'	1'		0.0		Moist, Stiff, Brown-Grey, SILT, with fine-medium gravel, trace fine sand, no odor	ML	
4'	6-8 8-10	2'	.75	.75'		0.0		Moist top 4" Moist, Brown, SAND, Bottom 6" Moist, Stiff, orange-Brown SILT, with clay, and little fine gravel, no odor	ML	
6'	3-4 5-4	2'	.25	.25'		0.0		Moist, Soft, Brown, SILT, w/ more clay	ML	
8'	4-7 9-10	2'	1'	1'		0.0		Moist-Very, med on stiff, Brown, SILT	ML	
10'	5-5 10-9	2'	1.25'	1.25'		0.0		Moist, Stiff, Brown-Red-Brown, SILT with clay and some fine gravel, no odor	ML	
12'	7-14 22-18	2'	1.75	1.75		0.0		Moist, Very stiff, Grey-Brown SILT w/ fine-medium Gravel, and sand, little clay, no odor laminated	ML	
14'	33-31 25-35	2'	1.75' 2'	1.75' 2		0.0		Moist-wet top 10" stiff, Bottom 1/2 Moist-Very, Hard, Brown (variegated stains) SILT w/ weathered shale, no odor	ML	
16'										

Well Construction:

PVC Screen 15-5'

Filter Sand 15-3'

(Bellmore, Natural Sand, B) ~7 bags

Bentonite 3-1'

(enviroplug, medium)

DTW: ~~11.70~~ 11.70'

DTB: ~~14.3~~ ~~14.8~~ 15.3'

OVERBURDEN BORING REPORT

PARSONS | CLIENT: | BORING NO.: 26-15

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 5/15/19
FINISH DATE: 5/15/19
CONTRACTOR: Parratt Wolff
DRILLER: Mark Eaves
INSPECTOR: Ave
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2'	SS	HMR	140
Air Hammer	5"	-	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MINIRAE 3000	VOC	-	0.0 ppb	0840	5/15/19	0840	5/15/19	50's sunny

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	5/15/19		
SOIL AMOUNT: (fraction of drum)	-		
DRUM #, LOCATION:			

COMMENTS:
Used a Dietrech rig w/ 5'x5" augers and 2' splitspoon to 6' then used air-hammer to advance

SAMPLES TAKEN:

SAMPLES	-
DUPLICATES	-
MS/MSD	-
MRD	-

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 26-15
COMMENTS: Weathered Bedrock (Shale) first seen at 4.5' Auger ha advance w/ air-hammer to 10'		DRILLER: Merle Ewel INSPECTOR: AWL DATE: 5/15/14

DEPTH (FEET)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	3-3	2'	.75'			0.0		Moist, Soft, Brown, SILT, Some Clay and some fine gravel, trace organics (roots).	ML	
	4-5									
	5-6	2'	1'	1'		0.0		Very moist, medium stiff, Brown (w/ orange stains) SILT with Clay, and some fine gravel, trace m. sand, trace c. gravel	ML	
4'	8-10									
	50/4	4"	4"			0.0		Moist-wet, Gray-Brown hard. SHALE. with silt. no oil		
6'										
								Well Construction:		
								PVC Screen 10-5'		
								Filter Sand 10-3'		
								(Bellmore, natural sand, #3)		
								Bentonite 3-1'		
								(enviroplug, medium)		
								DTB: 9.8'		
								DTW: 1.7'		

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** | **BORING NO.:** 26-16

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 5/15/19
FINISH DATE: 5/15/19
CONTRACTOR: Parratt-Wolff
DRILLER: Mark Eves
INSPECTOR: AVE
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2'	SS	HMR	140
Airhammer	5"	-	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRAE 3000	VOC	-	0.0 ppm	0840	5/15/19	0840	5/15/19	50's Sunny

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	5/15/19		
SOIL AMOUNT: (fraction of drum)	-		
DRUM #, LOCATION:			

COMMENTS:
Used a Dietrech Drill rig w/ 5' x 5" augers and 2' split spoon until 6' then used an "air-hammer" to advance

SAMPLES TAKEN:

SAMPLES	-
DUPLICATES	-
MS/MSD	-
MRD	-

PAGE OF

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 26-16
COMMENTS: Weathered Shale (bedrock) was at 4', competent bedrock is likely 6' or more deeper, auger refusal at 6.5' Remediated to 10' using air-hammer, water at seen 2'		DRILLER: Mark (WO) INSPECTOR: AUC DATE: 5/15/19

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	2-2 3-3	2'	.75	.75		0.0	0.0	Very moist-wet. Soft, Brown, SILT, w/ some fine-me. Sand, little fine gravel, trace clay no odor	ML	
4'	4-5 5-6	2'	1'	1'		0.0 0.0	0.0 0.0	wet, Soft, Brown, SILT with fine-medium Sand, fine Gravel, little-trace clay, no odor, Very Bottom had Shale	ML	
6'	50/4	4"	4"	4"		0.0	>0.0	TOP 2" wet, SHALE (weathered), w/ SILT, fm sand, clay. Bottom 4", moist-very, SHALE, w/ Silt, no odor	ML GM	

Well construction:

PVC Screen 10 - 5'

Filtersand 10 - 3'

(Bellmore, natural sand, B)

Bentonite 3 - 1'

(enviroplug, medium)

DTW: 0'

DTB: 9.47'

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** | **BORING NO.:** 26 17

PROJECT: Seneca Army Depot
SWMU # (AREA): SEA026
SOP NO.:

START DATE: 5/15/19
FINISH DATE: 5/16/19
CONTRACTOR: Parratt Wolff
DRILLER: Mark Eaves
INSPECTOR: Pat Ave
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? Y N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
Auger	5"	2'	2'	SS	HMR	140

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRAE 3000	VOC		Oxygen	0840	5/15/19	0840	5/15/19	50's sunny

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE	5/15/19		
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
Used a Diedrich rig, w/ 5"x 5ft auger, with a 2' split spoon.

SAMPLES TAKEN:
SAMPLES
DUPLICATES
MS/MSD
MRD

OVERBURDEN BORING REPORT

PARSONS	CLIENT:	BORING NO.: 26-17
COMMENTS: Weathered Shale (bedrock) at 3', tuk split spoon samples until 6' (refusal) augered to 10'.		DRILLER: Mark Ewes INSPECTOR: Ave DATE: 5/15/19

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	2-4 7-4	2'	.75'	.75'		dio		MOIST, medium STIFF, Brown SILT with fine Gravel, some clay, trace medium sand and coarse gravel, trace organics, no odor	ML	
4'	4-8 30-38	2'	1.5'	1.5'		dio		Top 2" wet, loose, Brown-Grey, Weathered SHALE with silt and fine Sand. Bottom 1" Moist-very, Hard, Grey Weathered SHALE with trace silt, no odor, Orange stains	GM	
6'	50/5	5"	5"	5"		dio		MOIST, Weathered Dense, Grey Drill Cred, SAA	GM	

Well construction:

PVC Screen 10 - 5'

Filter Sand 10 - 3'

(Bellmore, natural sand. B) - 4bag

Bentonite 3-1'

(enviroplug medium)

PVC Riser 5-0'

DTB: 8.83'

DTW: 2.61'

Soil Boring Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Richard Inclima	**BORING/WELL NO.:**	MW26-18
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Truck Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-26	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7236754
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8410876
		DRILLING HELPERS:	Add Name(s); Brad Palmer	**XY COOR UNIT:**	Degrees
FIELD METER #1:	**FIELD METER #2:**	**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	639.7638
TYPE:	**TYPE:**	**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:	**SERIAL#:**	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:	**MODEL:**	**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	**LIMIT:**	**DATE/TIME START:**	09/16/2019 11:46	**INCLINATION:**	
H&S:	**H&S:**	**DATE/TIME FINISH:**	09/16/2019 11:46		
COMMENTS:	**COMMENTS:**	**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
		SAMPLING DEVICE TYPE:	Linear Segment	**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:	2 Feet	**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD				**BORING LOG END DEPTH:**	15 Feet
METER #1:	**METER #2:**			**BACKFILL NOTES:**	

DEPTH	Feet		**FIELD METER #1**		**FIELD METER #2**		**CASING DETAILS**								
TOP	**BTM**	**SCREENING INTERVAL**	**0**		**0**		**DIAM In**	**LGTH Ft**	**RCVY LGTH**	**USCS Class.**	**SOIL MATRIX DESCRIPTION**	**#REF!**	**BEDROCK DEPTH/COR E LGTH**	**BORING INTERVAL NOTES**
0	0										Hole cleared by Other			Hole Clearing Notes: Other
0	1									OL	Dry, Brown - light, loose, SILT, Little Fine Gravel, And Fine to Medium Sand. FILL	Raised railroad grade		Organics (roots, grass), cement and cinder pieces in this interval.
1	1.5									ML	Damp, Brown - grayish, stiff, SILT, Some Clay, Little Fine Sand, Trace Fine Gravel			
1.5	2										Dry, Gray - light, Fine to Medium weathered BEDROCK			Weathered shale.
2	4										Dry, Gray - light, Medium to Coarse, weathered BEDROCK		4 Ft 11 Ft	Refusal at approximately 4'.

Sampling Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Richard Inclima	**BORING/WELL NO.:**	MW26-18
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Truck Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-26	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7236754
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8410876
		DRILLING HELPERS:	Add Name(s); Brad Palmer	**XY COOR UNIT:**	Degrees
FIELD METER #1:	**FIELD METER #2:**	**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	639.7638
TYPE:	**TYPE:**	**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:	**SERIAL#:**	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:	**MODEL:**	**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	**LIMIT:**	**DATE/TIME START:**	09/16/2019 11:46	**INCLINATION:**	
H&S:	**H&S:**	**DATE/TIME FINISH:**	09/16/2019 11:46		
COMMENTS:	**COMMENTS:**	**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
		SAMPLING DEVICE TYPE:	Linear Segment	**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:	2 Feet	**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD				**BORING LOG END DEPTH:**	15 Feet
METER #1:	**METER #2:**			**BACKFILL NOTES:**	

DEPTH	Feet		**FIELD METER #1**	**FIELD METER #2**	**SAMPLE DETAILS**						
TOP	**BTM**	**SCREENING INTERVAL**	**0**	**0**	**TOP**	**BTM**	**RCVY LGTH**	**SAMPLE ID**	**SAMPLE TIME**	**QAQC COLLECTED**	**SAMPLING INTERVAL NOTES**
0	0										Hole Clearing Notes: Other

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW-26-19

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 6/24/20
FINISH DATE: 6/24/20
CONTRACTOR: NYEG
DRILLER: S. Bowden
INSPECTOR: B. Coon
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4'	0 - 87	2'x2'	SS	HHR	140/30
air rotary	3.25"	78 - 15	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
multirae	VOC	-	0.0	0740	6/24/20	0730	6/24/20	70's Sunny

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
1) two liters added

SAMPLES TAKEN:
SAMPLES
DUPLICATES
MS/MSD
MRD

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW1-26-19
COMMENTS: 1) Drill with ATV CME 850 Rig 2) Sample with Split Spoon		DRILLER: S. Bodor INSPECTOR: A. Codd DATE: 6/24/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	2 12 10 12	2'	1'	NA	NR	NA QU QU	NR	0-.6 Dry, Gray + Brown, fm angular GRAVEL with some Silt, no odor or staining (Till) medium stiff .6-1' Dry, Grey, WEATHERED ROCK with silt and fine gravel. no odor, trace staining stiff. 2-~~3~~ 1.6" Dry. Gray to Dark Grey, WEATHERED Rock (Shale), little Silt. no odor. iron staining throughout very Dense.	GM GM GW	
2-4'	14/27 50/4	10"	10"	NA	NR	QU	NA			
4-6	34 50/2	8"	8"	NA	NR	QU	NA	4-4.8 Dry. Grey to Dark Grey. WEATHERED SHALE. little Silt, no odor, trace(iron) staining. ~~Hard~~ very Dense.	GW	
								Auger and Spoon refusal 6-6.5' Switch to air-rotary * Competent Rock 7'		
								Well Construction 15-5' Screen 15-3 Sand 3-1 Bentonite 1-0 Grout		

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW-26-19

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

PROJECT NO: 749674.08000
INSPECTOR: A. Cook
CHECKED BY: _____

DRILLING CONTRACTOR: NYEG
DRILLER: S. Budem
DRILLING COMPLETED: 6/24/20
BORING DEPTH: _____
DRILLING METHOD(S): HSA + Air-rotary
BORING DIAMETER(S): 4" 3.25"
ASSOCIATED SWMU/AOC: _____

POW DEPTH: _____
INSTALLATION STARTED: 6/24/20
INSTALLATION COMPLETED: 6/24/20
SURFACE COMPLETION DATE: _____
COMPLETION CONTRACTOR/CREW: _____
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION: _____

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5" LENGTH: 5' TOR: -

RISER:
TOC: See note (1) TYPE: PVC DIAMETER: 2" LENGTH: _____

SCREEN:
TSC: _____ TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-14

POINT OF WELL: (SILT SUMP)
YPE: _____ BSC: _____ POW: _____

GROUT:
TG: Surface TYPE: Type I Grout/Cement LENGTH: 3

SEAL: TBS: 1 TYPE: Bent. Chip. LENGTH: 1'

SAND PACK: TSP: 3 TYPE: Morie #0 LENGTH: 12'

SURFACE COLLAR:
TYPE: _____ RADIUS: _____ THICKNESS CENTER: _____ THICKNESS EDGE: _____

CENTRALIZER DEPTHS
DEPTH 1: _____ DEPTH 2: _____ DEPTH 3: _____ DEPTH 4: _____

COMMENTS:
1) Riser is BGS: 5 AGS: 2.5 Total 7.5'

*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

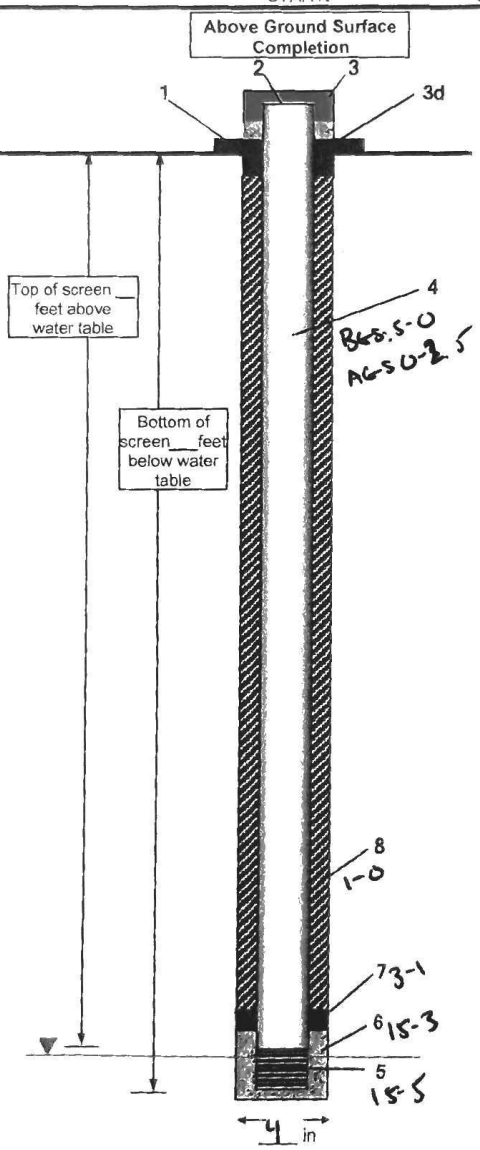
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW-26-19	1

~~Project Name~~ Seneca Army Depot, Romulus NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT : Seneca Army Depot — LOCATION : SEAD-26
DRILLING SUBCONTRACTOR : NVEG — DRILLER: S. Rockym
DRILLING METHOD / EQUIPMENT: HSA + Air-rotary — HELPERS: A. Skinner
WATER LEVEL: START: END: — GEOLOGIST: ~~A. Cook~~



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter — PVC / 2"
- b) height above ground — 2.5'
- c) length below ground
- d) type / quantity of sealant
- e) well centralizers — NA

5- Well screen :
- a) type / diameter — PVC 12"
- b) slot size — 10-14
- c) length — 10'

6- Well screen filter pack :
- a) type — Morie #0
- b) length — 12'

7- Bentonite seal :
- a) method of placement — Pour from Surface
- b) type — Bent. Chips
- c) length — 3'

8- Grout :
- a) type — Type I
- b) grout mix — Grout / Cement
- c) method of placement — Pour from Surface
- d) depth (feet bgs) — 2'

Soil Boring Log - Hollow Stem Auger

CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MW26-20
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-26	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7230085
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8461497
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees
		BORE HOLE SIZE:	8.25 Inch	**ELEVATION:**	629.92128
		HOLE SIZE:	4.25 Inch	**Z COOR UNIT:**	Feet
		MULTIPLE CASING SIZES:		**DRILLING ORIENTATION:**	
		BORING LOG DATE/TIME:		**BEARING:**	
		DATE/TIME START:	09/12/2019 11:20	**INCLINATION:**	
		DATE/TIME FINISH:	09/12/2019 11:19		
		SAMPLING EQUIPMENT:		**BORING DETAILS:**	
		SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
				BORING LOG END DEPTH:	13.5 Feet
				BACKFILL NOTES:	

FIELD METER #1:		**FIELD METER #2:**	
TYPE:	PID	**TYPE:**	Water Level
SERIAL#:		**SERIAL#:**	
MODEL:		**MODEL:**	
LIMIT:	0 ppm	**LIMIT:**	Ft
H&S:	5 ppm	**H&S:**	Ft
COMMENTS:		**COMMENTS:**	

FIELD SCREENING METHOD

METER #1:	Breathing Zone	**METER #2:**	Depth Reading

DEPTH	Feet		**FIELD METER #1**		**FIELD METER #2**		**CASING DETAILS**							
TOP	**BTM**	**SCREENING INTERVAL**	**ppm**	**H&S**	**Ft**		**DIAM In**	**LGTH Ft**	**RCVY LGTH**	**USCS Class.**	**SOIL MATRIX DESCRIPTION**	**#REF!**	**BEDROCK DEPTH/COR E LGTH**	**BORING INTERVAL NOTES**
0	0										Hole cleared by Other			Hole Clearing Notes: Other
0	2									OL	Damp, Brown - grayish SILT, And Clay			
2	3.2									CH	Moist, Brown - grayish CLAY			
3.2	4									GP			4 Ft 9.5 Ft	Weathered BEDROCK. Refusal at 4'

Sampling Log - Hollow Stem Auger

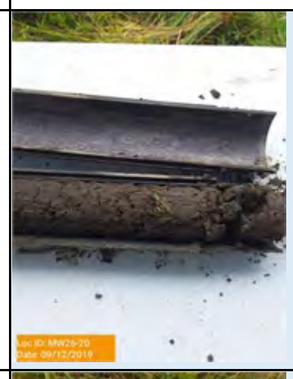
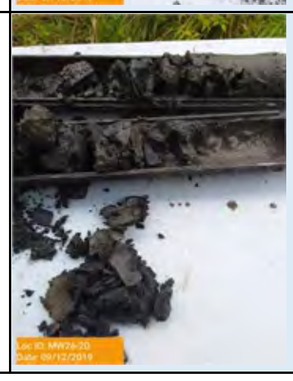
CLIENT:	USACE	**PARSONS ON-SITE:**	Cory Mahony	**BORING/WELL NO.:**	MW26-20
PROJECT NAME:	Seneca	**DRILLING CONTRACTOR:**	Parratt Wolff, Inc	**LOCATION DESCRIPTION**	
SITE NAME:	SEDA	**RIG TYPE:**	Track Mounted	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	SEAD-26	**MACHINE MODEL #:**	CME-55	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Hollow Stem Auger	**NORTHING/LAT.:**	42.7230085
		LICENSED DRILLER:	Add Name(s); Devin Gawarecki	**EASTING/LONG.:**	-76.8461497
		DRILLING HELPERS:	Add Name(s); Kyle Robinson	**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**					
TYPE:	PID	**TYPE:**	Water Level	**BORE HOLE SIZE:**	8.25 Inch	**ELEVATION:**	629.92128
SERIAL#:		**SERIAL#:**		**HOLE SIZE:**	4.25 Inch	**Z COOR UNIT:**	Feet
MODEL:		**MODEL:**		**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**BORING LOG DATE/TIME:**		**BEARING:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME START:**	09/12/2019 11:20	**INCLINATION:**	
COMMENTS:		**COMMENTS:**		**DATE/TIME FINISH:**	09/12/2019 11:19		
				SAMPLING EQUIPMENT:		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
						BORING LOG END DEPTH:	13.5 Feet

FIELD SCREENING METHOD			
METER #1:	Breathing Zone	**METER #2:**	Depth Reading

BACKFILL NOTES:

DEPTH	Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	2	Damp, Brown - grayish SILT, And Clay			
2	3.2	Moist, Brown - grayish CLAY			
3.2	4				

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW-26-21

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 6/18/20
FINISH DATE: 6/18/20
CONTRACTOR: NYEG
DRILLER: S. Boden
INSPECTOR: A. Cook
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4"	0-5	2"x2'	SS	HHR	140/30
CAT rotary	3.25"	5-15	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
Multirae	PID 10.6	-	0.1	0845	6/16/20	0830	6/16/20	70's Sunny

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE - NA

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
1) Drill with CME 850 ATV rig
2) No water added to hole

SAMPLES TAKEN: NA

SAMPLES	
DUPLICATES	
MS/MSD	
MRD	

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW26-21
COMMENTS: 1) Drilled CME&550 ATV Rig 2) Sampled w/ Splitspoon		DRILLER: S. Boden INSPECTOR: A. Cook DATE: 6/18/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	2 2 5 6	2'	1'	NA	NA	0.0	NA	0-1' Slightly moist, Brown, SILT w/ some clay, trace fine gravel and organics, (roots), no odor, some orange/iron staining (over burden) soft	ML	
2-4'	11 8 11 9/9	2'	4"			0.0		2-2.1 Wet, Brown, f-m SAND with some fine gravel and coarse sand, and silt, trace clay. no odor or staining soft		
						0.0		2.1-2.4 Wet, Brown & Black WEATHERED SHALE. no odor or staining soft	GM	
								* ~3' hear auger grinding on rock		
4-6'	17 41 45 5/2	2'	2'			0.0		4-4.2 ~~Black~~ moist. Black - Dark grey WEATHERED SHALE w/ silt, no odor or staining Hard	GM	
								4.2-6 ~~Dry~~ Dark Grey, Dry, Grey, WEATHERED SHALE. no odor, ~~or staining~~, Hard. very slight/trace iron staining throughout in the form of small spots	GM	
								~~very slightly~~ moist		
								- auger refusal, begin to air hammer, dust is coming out		
6-8	50/3	~3"	3"			0.0		- ~~Competent rock~~ 6' AC		
								6-6.1 wet. Dark Grey, WEATHERED SHALE, no odor or staining, Hard	GM	
								Competent Rock 7'		
								- no minimal dust, wet rock coming out of hole		
								- Slightly more dust + four cracks bottom ~14-15'		

Well Construction
5-15 Screen
3-15 Sand
3-1 Bentonite
0-1 Grout

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW-26-21

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

PROJECT NO: 744674.1000
INSPECTOR: A. Cook
CHECKED BY:

DRILLING CONTRACTOR: NYEG
DRILLER: S. Burdon
DRILLING COMPLETED: 6/18/20
BORING DEPTH: 15'
DRILLING METHOD(S): HSA + Air rotary
BORING DIAMETER(S): 4" & 3.25"
ASSOCIATED SWMU/AOC:

POW DEPTH: 15'
INSTALLATION STARTED: 6/18/20
INSTALLATION COMPLETED: 6/18/20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW:
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5" LENGTH: 5' TOR: -

RISER:
TOC: See note (1) TYPE: PVC DIAMETER: 2" LENGTH: 7.5

SCREEN:
TSC: 5' TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-14

POINT OF WELL: (SILT SUMP)
YPE: BSC: POW:

GROUT:
TG: Surface TYPE: Type I Portland LENGTH: 1'

SEAL: TBS: 1-3 TYPE: chips LENGTH: 2'

SAND PACK: TSP: 5-3 TYPE: morie #0 LENGTH: 2'

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
1) Riser is BGS -5.0 AGS 0 - 2.5

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

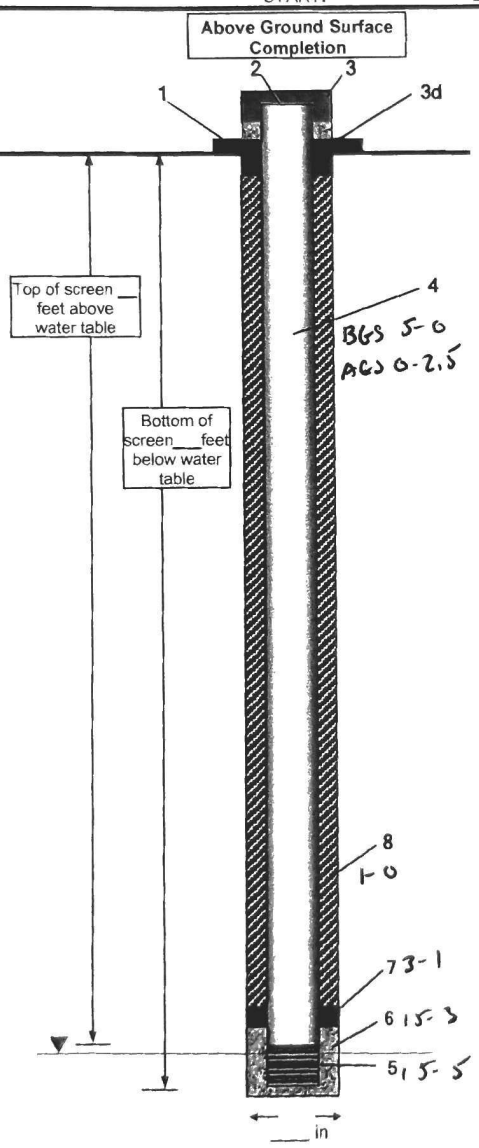
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW-26-21	1

Project Name

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT : Seneca Army Depot
DRILLING SUBCONTRACTOR : NYEG
DRILLING METHOD / EQUIPMENT: HSA - sonic rotary
WATER LEVEL: START: END:
LOCATION : SEAD 26
DRILLER: S. Bodine
HELPERS: A. Skinner
GEOLOGIST: P. Cook



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC 12"
- b) height above ground
- c) length below ground: 5'
- d) type / quantity of sealant: -
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-14
- c) length: 10'

6- Well screen filter pack :
- a) type: morie #0
- b) length: 12'

7- Bentonite seal :
- a) method of placement: Pour from surface
- b) type: Chips
- c) length: 2'

8- Grout :
- a) type: Type I
- b) grout mix: Grout Cement
- c) method of placement: Pour from surface
- d) depth (feet bgs): 1

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW26-22

PROJECT: Seneca Army Depot
SWMU = (AREA): SEAD 26
SOP NO.:

START DATE: 6/17/20
FINISH DATE: 6/17/20
CONTRACTOR: NYEG
DRILLER: S. Bodam
INSPECTOR: A. Stone
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA (ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4"	0-6	2'x2"	SS	HHR	140/30
w/ roller	325"	6-15	—	—	—	—

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
RKI GX-600	PID	-	0.0	1430	6/17/20	0750	6/17/20	Sunny 80s

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE - NO

DATE			
SOIL AMOUNT : (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
1) no water added to hole

SAMPLES TAKEN: NO
SAMPLES
DUPLICATES
MS/MSD
MRD

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MU26-22
COMMENTS: 1) Drill with CME 75 ~~Truck Mounted Rig~~ SSG ATV rig 2) Sample 4 SS 3)		DRILLER: S. Bodam INSPECTOR: A Cook DATE: 6/17/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	4 6 8 14	2'	6"	NA	NA	0.0	NA	0-2.2 Dry, Grey-Brown, SILT with trace clay and organics (roots) no odor or staining	ML	
								2.2-2.4 Slightly moist, Brown, SILT with little fine gravel no trace clay, no odor or staining. trace course gravel (lime stone)	ML	
								2.2-2.6 Dry. Grey, WEATHERED ~~SHALE~~ ROCK, no odor or staining (shale or lime)	GM	
2-4	50/3	3"	3"			0.0				
								4.4.3 Dry, Dark Grey, WEATHERED SHALE, no odor or staining there, trace fossils (Bivalve)	GM	
~~4-6~~ 4-6	~~4~~ ~~50/1~~ 50/6	7"						~~Auger refusal~~		
								6-6.7 Slightly moist to moist (Limestone), Dark Grey, WEATHERED SHALE. no odor, little ~~same~~ trace brown staining - sign of water, there Auger refusal ~50 Bedrock - 6 % competent	GM	
								Well Construction 15.5 ~~14-4~~ Screen 15.3 ~~14-3~~ Sand 3-1 Bentonite 1-0 Grout 4--3 Riser		
								* Sign of water ~ 6.2' w/ iron-staining in Endo - wet slightly moist		
								* 12-12.5, less dust and Dark rock (moist rock) is coming out of hole. - Compressor overheating let Sit until runs, begin to air ~~hammer~~ again, water pouring out from well		

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW-26-22

PROJECT: Seneca Army Depot
LOCATION: SEAD 26
PROJECT NO: 749674.08000
INSPECTOR: A. Cole
CHECKED BY:

DRILLING CONTRACTOR: NYEG
DRILLER: S. Boden
DRILLING COMPLETED: 6/17/20
BORING DEPTH:
DRILLING METHOD(S): HSA + air rotary
BORING DIAMETER(S): 4" + 3.25"
ASSOCIATED SWMU/AOC:
POW DEPTH:
INSTALLATION STARTED: 6/17/20
INSTALLATION COMPLETED: 6/17/20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW:
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5" LENGTH: 5' TOR: -

RISER:
TOC: Screened CAP TYPE: PVC DIAMETER: 2" LENGTH: 7.5'

SCREEN:
TSC: 5' TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-14

POINT OF WELL: (SILT SUMP)
YPE: BSC: POW:

GROUT:
TG: Surface TYPE: Type I Cement LENGTH: 2'

SEAL: TBS: 1-3 TYPE: Bent. Chips LENGTH: 2'

SAND PACK: TSP: 15-3 TYPE: Morie #0 LENGTH: 2'

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
1) Riser is BGS 5-0 AGS 0-2.5

*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

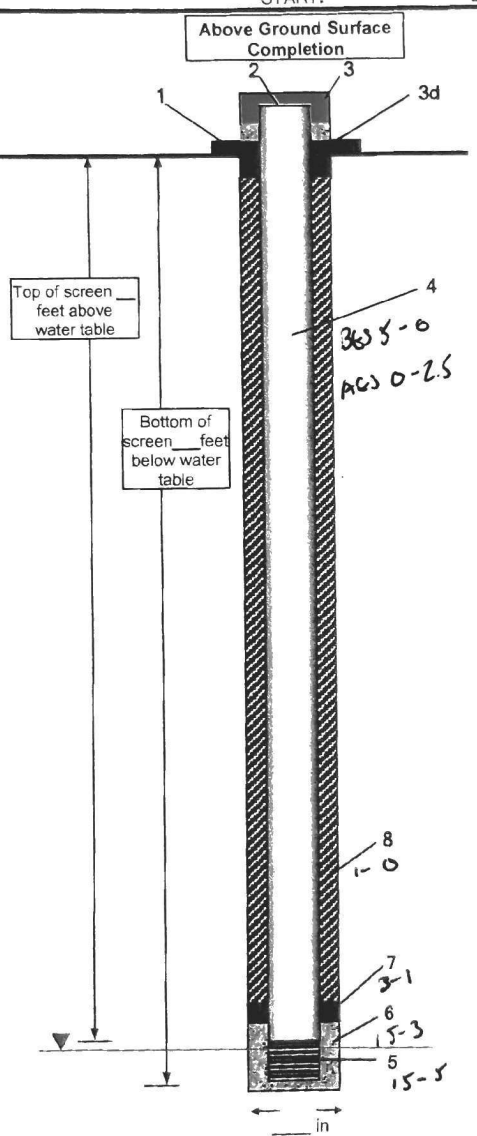
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW26-22	1

~~Project Name~~ Seneca Army Depot, Romulus, NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot — LOCATION: SEAD 26
DRILLING SUBCONTRACTOR: NYSEG — DRILLER: S. Bodem
DRILLING METHOD / EQUIPMENT: HSA + Cas-rotary — HELPERS: A. Skinner
WATER LEVEL: START: END: — GEOLOGIST: A. Cook



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground
- c) length below ground: 5'
- d) type / quantity of sealant: -
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-14
- c) length: 10'

6- Well screen filter pack :
- a) type: morie #0
- b) length: 12'

7- Bentonite seal :
- a) method of placement: Pour from surface
- b) type: chips
- c) length: 2'

8- Grout :
- a) type: Type I
- b) grout mix: cement/grout
- c) method of placement: Pour from surface
- d) depth (feet bgs): 0-3'

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** USACE | **BORING NO.:** MW 26-23

PROJECT: Sonoma Army Depot
SWMU # (AREA): Adjacent to SEAD 26 Pond
SOP NO.:

START DATE: 5-26-20
FINISH DATE: 5-26-20
CONTRACTOR: MACTEC / Parsons
DRILLER: J. Ranschau
INSPECTOR: E Ashton
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA. (in)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
AH	3 1/8	0-15	NA			

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY NA

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE – NA

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:

(1) No air-monitoring was performed because PFOAs not detectable by PID

(2) No chicka sand used because of shallow depth.

(3) No water used during drilling

SAMPLES TAKEN: NA

SAMPLES
DUPLICATES
MS/MSD
MRD

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW26-235
COMMENTS: - Air-hammered		DRILLER: J. Ramsden (CH2MHILL)
		INSPECTOR: E. Aslitan (Parsons)
		DATE: 8-26-96

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
NA	NA	NA	NA	NA	NA	NA	NA	* See lithologic log for MW26-230 for subsurface description of 0' to 15' bgs.* - Air-hammered to 15' bgs and installed screen from 5'-15' bgs - water observed at ≈ 7' bgs - Competent rock at 7.5' bgs - No water used during drilling	NA	NA

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW26-23 S

PROJECT: Seneca Army Depot
LOCATION: Pond at SEAD 26 Adjacent to
PROJECT NO: 745674.0800
INSPECTOR: E. Aslett
CHECKED BY:

DRILLING CONTRACTOR: NYEG
DRILLER: J. Pauscha
DRILLING COMPLETED: 8-26-20
BORING DEPTH: 15'
DRILLING METHOD(S): Air-hammer
BORING DIAMETER(S): 3 7/8"
ASSOCIATED SWMU/AOC:

POW DEPTH: 15'
INSTALLATION STARTED: 8-26-20
INSTALLATION COMPLETED: 8-26-20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW: NYEG
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING: DIAMETER: 4.5 LENGTH: 5 TOR: —

RISER: TOC: see note (1) TYPE: PVC DIAMETER: 2" LENGTH: 5 (1)

SCREEN: TSC: 5' TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10"

POINT OF WELL: (SILT SUMP) – NA
YPE: BSC: POW:

GROUT: TG: Surface TYPE: Type I (cement/bent) LENGTH: 2.5'

SEAL: TBS: 2.5 TYPE: Bent. chips LENGTH: 1

SAND PACK: TSP: 3.5 TYPE: ~~Bentchips~~ Morie #0 LENGTH: 11.5

SURFACE COLLAR: TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS – NA
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
(1) Riser is from 0-5' bgs w/ 2.5' of riser above ground. Total length is 7.5'.
(2) No water used during drilling
(3) No chip sand used because of shallow depth
*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

(4) Moved original location 5' to the south due to the potential of soft ground during rain events. Location still adjacent to pond

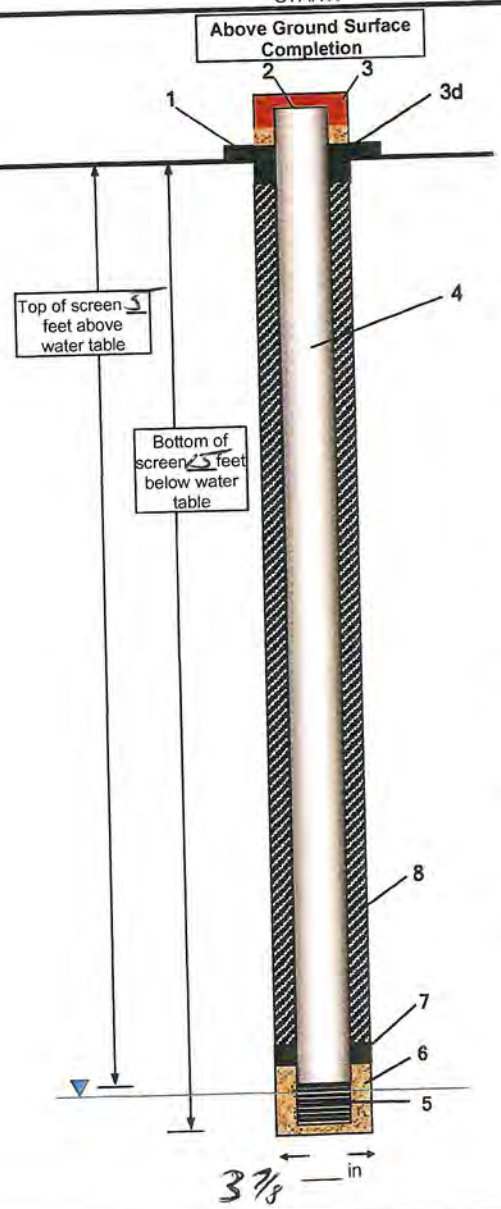
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW26-235	1

~~Project Name~~ Seneca Army Dept Romulus, NY

Location Groundwater Monitoring Well Adjacent to SEAD 26 Pond

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Dept, Romulus, NY
LOCATION: Adjacent to SEAD 26 Pond
DRILLING SUBCONTRACTOR: MEG
DRILLER: J. Paaschen
DRILLING METHOD / EQUIPMENT: Air-hammer, ATV
HELPERS: M. Trevett
WATER LEVEL: START: END:
GEOLOGIST: E. Ashton



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: 2.5'
- c) length below ground: 5'
- d) type / quantity of sealant: -
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-iw
- c) length: 10'

6- Well screen filter pack :
- a) type: Morie #0
- b) length: 11.5'

7- Bentonite seal :
- a) method of placement: Pour from surface
- b) type: Chips
- c) length: 1'

8- Grout :
- a) type: Type I cement / bent
- b) grout mix
- c) method of placement: Pour from surface
- d) depth (feet bgs): 2.5'

(9) No choker sand used due to shallow depth.

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW 26-230

COMMENTS:
1. AR - hammered split spoon
2. WR - weathered rock
3. CR - competent rock

DRILLER: J. Ranscher (MYEG)
INSPECTOR: E. Ashton (Parsons)
DATE: 8-25-20, 8-26-20

DEPTH (ft)	BLOWS PER 6 INCHES	PENETRATION RANGE (FEET)	RECOVERY RANGE (FEET)	DEPTH INT (FEET)	NO.	VOC	RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
	3	NA	24	NA	NA	NA	NA	(0-2') dry to slightly moist, stiff, brown, SILT, some clay, little f-gravel, trace f-sand, low to mod. plasticity, no odor or stains - (Fill)	ML/CL	
	4									
	5									
2'	6									
	4		12							
	1							Typ. trace organic roots		
	7								ML/CL	
4'	6							(2'-4') SAA, except more percentage of clay, mod plasticity, no roots (Fill)		
	16		18							
	8									
	26									
6'	45							(4'-6') wet, hard, brown, ~~weathered rock (shale) with~~ WEATHERED SHALE with silt and clay interbedded, no odor or stains, trace % of f-m sand.	WR/~~ML~~ CL/ML	
	50/.2		3							
	-									
	-									
8'										
								(6'-6.2') wet, hard, brown, WEATHERED SHALE. ~~some~~ silt in water, no odor or stains - spoon refusal at 6.2'	WR	
								- roller bit using air starting 6.2' bgs.		
								- competent rock at 8' bgs.	CR	
								- set casing and grouted into place at 6' bgs.		

CORE BORING REPORT

PARSONS	CLIENT: USACOE	BORING #: MW26-230

PROJECT: Seneca Army Depot
SWMU # (AREA): Adjacent to SEAD 26 Pond
SOP NO.:

DATE CORING STARTED: 8-25-20
DATE CORING COMPLETED: 8-26-20
CONTRACTOR: MEG / Parsons
DRILLER: J. Panschar (MEG)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST: " "
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: -
OVERBURDEN THICKNESS: -
GALLONS OF WATER USED

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
NA			

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
NA				

COMMENTS:
- Air-hammered borehole.

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
8'	NA	NA	NA	NA	NA	NA	- start to drill in competent rock at 2 8' SP. - air-hammer, as approved by USACOE. - no water used. - 8-27' = Dry soil cuttings, shale. - 27-32' = wet zone, shale. - 32'-39' = dry soil cuttings, shale - 40'-57' = wet soil cuttings, shale. Good water yield zone. - borehole was made good water when blown out several times to clean out sediment - stopped drilling at 57' SP.
57' 52'							

INVESTIGATION DERIVED WASTE : - NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

BEDROCK MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW26-230
PROJECT: Seneca Army Depot	PROJECT NO: 745674-05000	
SWMU # (AREA): Adjacent to SEAD 26 Pond	INSPECTOR: Ed Ashton (Parsons)	
SOP NO.:	CHECKED BY:	

DRILLING CONTRACTOR:	MEG	POW DEPTH (ft):	57'
DRILLER:	J. Rauschka	INSTALLATION STARTED:	8-26-20
DRILLING COMPLETED:	8-26-20	INSTALLATION COMPLETED:	8-27-20
BORING DEPTH:	57'	SURFACE COMPLETION DATE:	
DRILLING METHOD(S):	hv-hammer	COMPLETION CONTRACTOR/CREW:	MEG
BORING DIAMETER(S):	3 7/8"	BEDROCK CONFIRMED (Y/N?)	Y

PROTECTIVE SURFACE CASING – NA

DIAMETER (ft): _____ LENGTH (ft): _____

RISER

TYPE: PVC TR (ft): 0 (2)

DIAMETER(in): 2 LENGTH (ft): 43.5 (2)

SURFACE COLLAR

TYPE: _____ RADIUS (ft): _____

THICKNESS OF CENTER (ft): _____ THICKNESS OF EDGE (in): _____

SCREEN

TYPE: PVC TSC (ft): 42'

DIAMETER (in): 2 SLOT SIZE: 10-W LENGTH (ft): 15'

OUTER CASING

TYPE: steel drill casing TC (ft): 0 (1)

DIAMETER (in): 4 POC (ft): 8 LENGTH (ft): 8

POINT OF WELL (SILT SUMP) – NA

TYPE: _____ BSC (ft): _____ POW(ft): _____

GROUT

TYPE: cement/bent. TG (ft): 0 LENGTH (ft): 30

SEAL

TYPE: Bent. chips TBS (ft): 30 LENGTH (ft): 8

SAND PACK

FINE SAND TYPE: Morie #00 TSP (ft): 38 LENGTH (ft): 2

COARSE SAND TYPE: Morie #0 TSP (ft): 40 LENGTH (ft): 17

ACRONYMS

TR	Top of Riser	BSC	Bottom of Screen	TG	Top of Grout
TSC	Top of Screen	POW	Point of Well	TBS	Top of Bentonite Seal
BGD	Background	TSP	Top of Sand Pack		

COMMENTS: (1) no water used for drilling

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

(1.) outer casing was set with competent rock at 8' bgs and acts as a protective casing.

(2.) Riser extends 1.5' above surface

(3) Centralizer (40-41')

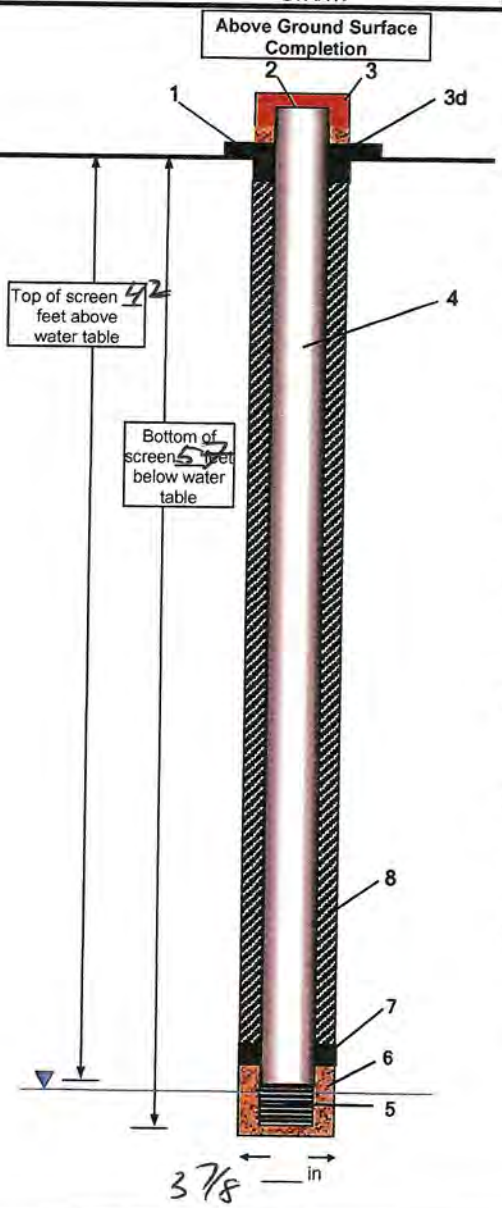
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW26-230	1

~~Project Name~~ Seneca Army Depot Romulus, NY

Location Groundwater Monitoring Well Adjacent to SEAD-26 Pond

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY
LOCATION: SEAD 26
DRILLING SUBCONTRACTOR: NYSEG
DRILLER: S. Rauscher
DRILLING METHOD / EQUIPMENT: ATV, air-hammer
HELPERS: M. Trevett
WATER LEVEL: START: END:
GEOLOGIST: E. Ashton



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: 1.5'
- c) length below ground: 42'
- d) type / quantity of sealant: —
- e) well centralizers: 40-41'

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-slot
- c) length: 15'

6- Well screen filter pack :
- a) type: Morie #00, Morie #0
- b) length: 2', 17'

7- Bentonite seal :
- a) method of placement: pour from surface
- b) type: chips
- c) length: 8'

8- Grout :
- a) type: Type I
- b) grout mix: cement / bent.
- c) method of placement: Tremie
- d) depth (feet bgs): 0 - 30'

(9) outer casing
- 0-8' SPS
- grouted in place

- steel drill casing (4-in dia)
- Type I grout (cement / bent)

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** USACOE | **BORING NO.:** MW 26-24

PROJECT: Seneca Army Depot
SWMU # (AREA): Fayette Road
SOP NO.: —

START DATE: 5-25-20
FINISH DATE: 5-25-20
CONTRACTOR: MACTEC/Parsons
DRILLER: J. Ranscha
INSPECTOR: E Aylsworth
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA. (in)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
AHA	3 7/8	0-15	2"x2'	SS	HHR	140 lb / 30 in

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY — NA

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE — NA

DATE			
SOIL AMOUNT : (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:

(1) No air monitoring was performed because PFAS not detectable by PID

(2) No cuttings soil used because of shallow depth

(3) No water used during drilling

SAMPLES TAKEN: — NA

SAMPLES
DUPLICATES
MS/MSD
MRD

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACE | BORING NO.: MW 26-24

COMMENTS: (1) AV-hammer: split spoon
(2) WR = weathered rock
(3) CR: competent rock

DRILLER: J. Rawsler (MEG)
INSPECTOR: E. Ashton (Parsons)
DATE: 8-25-20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
2'	5 7 14 13 15 21 26	NA	22 21	NA	NA	NA	NA	(0-2'): dry, very stiff, brown, SILT, little clay; f-m sand, trace f-m gravel, low plasticity, no odor or stains (Till). - organic roots top 1-inch.	ML	
4'	50/3							~~(2-4')~~		
	34.5		6					(2-3.5') = same as above, except more f-m gravel percentage present. spoon refusal at 3.5'.	ML	
6	49 50/4		6					will take spoon from 4-6' sp (Till)		
8'			NA					(4-4.25') dry, very stiff, brown, SILT, trace clay, some f-m sand, no odor or stains - some f-m gravel (Till) spoon refusal at 4.25'. will spoon from 6-8' sp	ML	
	NA							(6-6.10') = STIFF, spoon refusal at 6.10' sps - (Till) - weather rock at bottom of spoon - competent rock at 11.5' sp - AV hammer from 6.10' to 15' - screen set from 5'-15' sp ~~- CR at 11.5 sp~~ - no water used during drilling.	ML/WR CR	
15										

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACE	WELL #: MW26-24

PROJECT: Seneca Army Depot
LOCATION: Fayette Road
PROJECT NO: 749674.08.000
INSPECTOR: E. Ashton
CHECKED BY:

DRILLING CONTRACTOR: NYEG
DRILLER: J. Ranschau
DRILLING COMPLETED: 8-25-20
BORING DEPTH: 15'
DRILLING METHOD(S): Air-hammer/split spoon
BORING DIAMETER(S): 3 7/8"
ASSOCIATED SWMU/AOC:
POW DEPTH: 15'
INSTALLATION STARTED: 8-25-20
INSTALLATION COMPLETED: 8-25-20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW: NYEG
BEDROCK CONFIRMED (Y/N?) Y (1)
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5 LENGTH: 5 TOR: —

RISER:
TOC: 2 ft bgs (1) TYPE: PVC DIAMETER: 2" LENGTH: 5 (1)

SCREEN:
TSC: 5' TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10"

POINT OF WELL: (SILT SUMP) — NA
YPE: BSC: POW:

GROUT: Type I (cement/bent)
TG: surface TYPE: ✓ LENGTH: 2.5'

SEAL: TBS: 2.5 TYPE: Bentchips LENGTH: 1'

SAND PACK: TSP: 3.5 TYPE: Morie #2 LENGTH: 11.5

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS — NA
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
(1) Riser is from 0-5' bgs w/ 2.5' of riser above ground. Total length is 7.5'
(2) no water used during drilling
(3) No chker sand used because of shallow depth.
*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

(4) moved original drilling (east of Fayette Road) to ~~across~~ across road in grass area because subsurface obstructions observed along original location. no area can be cleared.

CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW26-24	1

~~Project Name~~ Seneca Army Depot

Romulus, NY

Location Groundwater Monitoring Well — Fayette Road

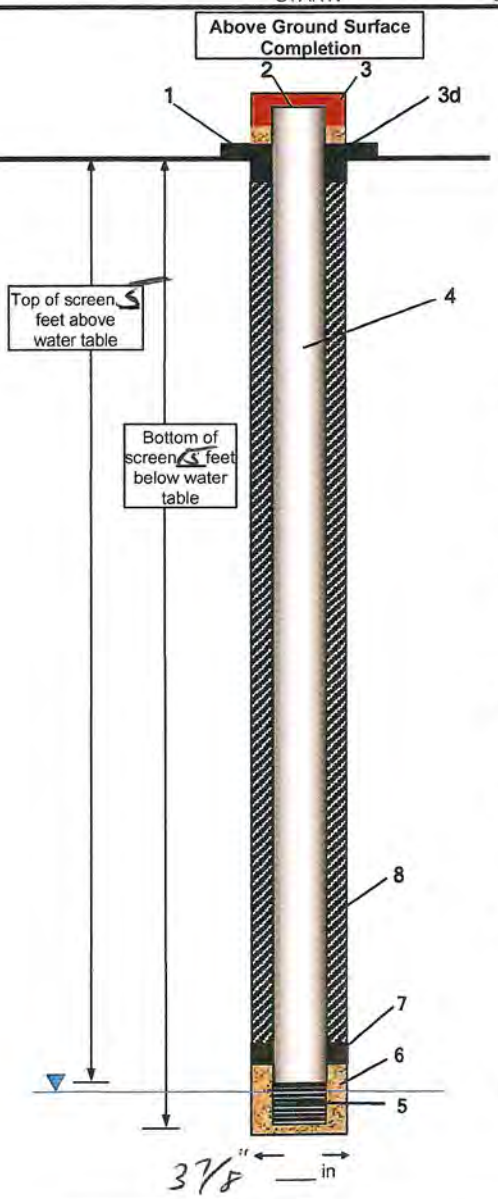
WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY — LOCATION: Fayette Road

DRILLING SUBCONTRACTOR: NYEG — DRILLER: J. Ranschau

DRILLING METHOD / EQUIPMENT: ATV, air-hammer + split spoon — HELPERS: M. Trevett

WATER LEVEL: START: END: — GEOLOGIST: E. Ashton



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing : _____
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: 2.5'
- c) length below ground: 5'
- d) type / quantity of sealant: —
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10"
- c) length: 10'

6- Well screen filter pack :
- a) type: Morie #0
- b) length: 11.5'

7- Bentonite seal :
- a) method of placement: pour from surface
- b) type: chips
- c) length: 1'

8- Grout :
- a) type: Type I cement/bent
- b) grout mix
- c) method of placement: pour from surface
- d) depth (feet bgs): 2.5'

(9) No filter sand used due to shallow depth.

OVERBURDEN BORING REPORT

PARSONS | **CLIENT:** USACOE | **BORING NO.:** MW 26-25

PROJECT: Seneca Army Depot
SWMU # (AREA): Fayette Road
SOP NO.: —

START DATE: 8-24-20
FINISH DATE: 8-24-20
CONTRACTOR: MEG / Parsons
DRILLER: J. Rauscher
INSPECTOR: E. Ashton
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	3 1/8	0 – 15	2"	SS	HHR	140lbs/24"

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY — NA

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE — NA

DATE			
SOIL AMOUNT : (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:

(1) No air-monitoring was performed because PIDs are not detectable by PID

SAMPLES TAKEN: — NA

SAMPLES
DUPLICATES
MS/MSD
MRD

(2) no cuttings saved as well because of shallow depth

(3) No water used during drilling

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW 28-25

COMMENTS:
- ATV, split spoon, air-hammer
- WR = weathered Rock
- CR = competent Rock

DRILLER: J. Pentecher (Cayuga)
INSPECTOR: E. Ashton (Parsons)
DATE: 8-24-20

DEPTH (Ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
	4	NA	24	NA	NA	NA	NA	(0-2') dry, stiff, brown, SILT, minor clay, trace f-sand, some f-m gravel, trace organic roots (1/2 inch), no odor or stains - (Till)	(ML)	NA
	6									
	6									
2	6									
	12		~~24~~					(2-4') dry, hard, brown, SILT, ~~trace~~ minor f-sand, trace clay,		
	15									
	19									
4'	16							some f-c gravel ~~(weathered bedrock)~~, no odor or stains - (Till)	(ML)	
	11		22							
	10									
	7							(4-6') dry to little moist, very stiff,		
	4								(ML)	
6	8		14					brown SILT, ~~some clay~~ some stiff, low plasticity,		
	31							trace f-sand, some f-m clay, trace f-c gravel, no odor or stains - (Till)		
	50/.4									
8'	-							(6-7.4) ~~moist to slightly wet~~	~~(ML)~~ (CL)	
			NA					6.0-6.5' = ~~moist~~ moist to slightly wet, med. stiff, brown, SILT with clay, trace f-sand, some f-gravel, soft, med. plasticity, no odor or stains - (Till)	(ML/CL)	
								6.5-7.4 = Dry, weather rock. spoon refusal at 7.4' sp.	WR	
								- Air-hammer starting at 7.4' bgs		
								- Competent Rock at ± 9.0' sp	CR	
								- Installing screen from 5-15' sp		
								- no water used during drilling.		
15										

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACE	WELL #: MW 26-25

PROJECT: Seneca Army Depot
LOCATION: Fayette Road

PROJECT NO: 749674 CB 00
INSPECTOR: E. Ashton
CHECKED BY:

DRILLING CONTRACTOR: MEG
DRILLER: J. Ranscher
DRILLING COMPLETED: 8-24-20
BORING DEPTH: 15'
DRILLING METHOD(S): Air-hammer / split spoon
BORING DIAMETER(S): 3 7/8"
ASSOCIATED SWMU/AOC: —

POW DEPTH: 15'
INSTALLATION STARTED: 8-24-20
INSTALLATION COMPLETED: 8-24-20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW: MEG
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5" LENGTH: 5' TOR: —

RISER:
TOC: Same (1) TYPE: PVC DIAMETER: 2" LENGTH: 5' (1)

SCREEN:
TSC: 5' TYPE: PVC DIAMETER: 2 LENGTH: 10' SLOT SIZE: 10 slot

POINT OF WELL: (SILT SUMP) — NA
YPE: BSC: POW:

GROUT:
TG: Surface TYPE: Type I (cement/bent) LENGTH: 2.5'

SEAL: TBS: 2.5' TYPE: Bentchip LENGTH: 1'

SAND PACK: TSP: 3.5' TYPE: Morie #0 LENGTH: 11.5'

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS — NA
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
(1) Riser is from a-5' sp & 2.5' of riser above ground. Total length is 7.5'.
(2) No water used during drilling
(3) No cuttings used because of shallow depth
* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

(4) Moved original drilling (east of Fayette Road) 70 across road on grass area because subsurface obstructions observed along original location. No area can be cleared

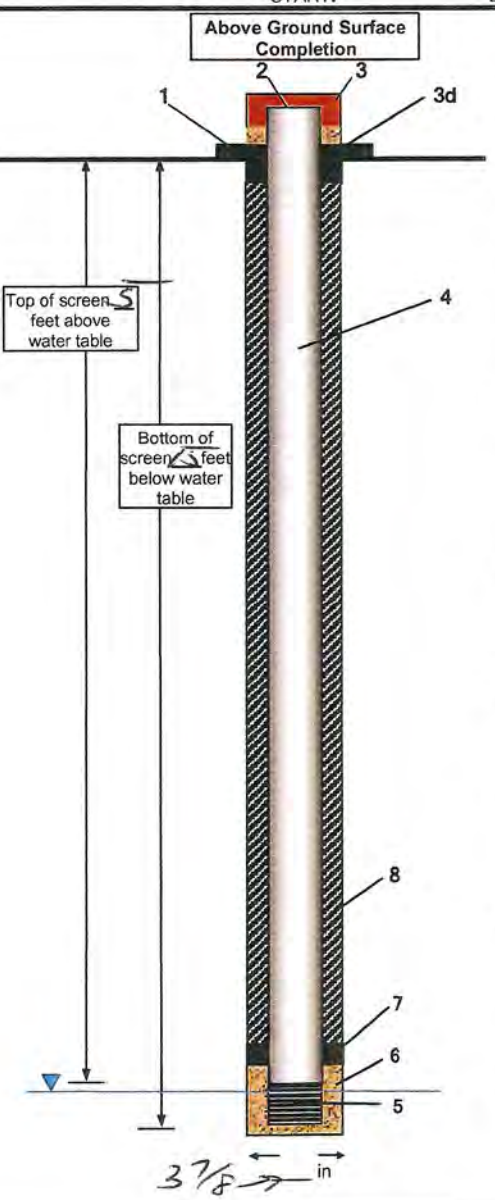
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW 26-25	1

~~Project Name~~ Seneca Army Depot
Romulus, NY
Fayette Road

Location **Groundwater Monitoring Well**

WELL INSTALLATION DATA RECORD

PROJECT :	Seneca Army Dept, Romulus, NY	LOCATION :	Fayette Road
DRILLING SUBCONTRACTOR :	NYEG	DRILLER:	J. Ranschau
DRILLING METHOD / EQUIPMENT:	ATV, air-hammer, split spoon	HELPERS:	M. Trzuski
WATER LEVEL:	START: END:	GEOLOGIST:	E Aslett



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing : _____
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter — PVC / 2"
- b) height above ground — 2.5'
- c) length below ground — 5'
- d) type / quantity of sealant — -
- e) well centralizers — NA

5- Well screen :
- a) type / diameter — PVC / 2"
- b) slot size — 10
- c) length — 10'

6- Well screen filter pack :
- a) type — Morie #0
- b) length — 11.5'

7- Bentonite seal :
- a) method of placement — pour from surface
- b) type — chips
- c) length — 1'

8- Grout :
- a) type — Type I
- b) grout mix — cement / bent.
- c) method of placement — pour from surface
- d) depth (feet bgs) — 2.5'

(9) NJ Chilko sand used due to shallow depth.

OVERBURDEN BORING REPORT

PAGE 1 OF 2

PARSONS

COMMENTS:
1) Drill w/ CME 850 ATV Rig
2) Sample with Split spoon

CLIENT: USACOE

BORING NO.: MW-26-26

DRILLER: A.S.S. Boden

INSPECTOR: A. Cook

DATE: 6/18/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	12 23 21 29	2'	1.25	NA	MW	0.0	NA	0-1.25' Dry, Grey, SILT with weathered / Crushed Stone no odor. some iron staining throughout rock. Bottom is very slightly moist w/ trace clay very stiff.	ML	
2-4'	12 8 8 12	2'	2'	MW	6.0			2-2.5 Very slightly moist, Grey SAA very stiff. no odor, slight staining (iron)	ML	
				NA	0.0			2.5-3.6 slightly moist, mottled grey, tan, and Orange. SILT with little-fine fine gravel and little clay, no odor some iron staining throughout. (waste) wood (Fill) stiff.	ML	
				NA	40.2			3.4-4 Ver slightly moist-moist, Very dark grey-black SILT with little clay, trace gravel, strong (petroleum) odor and some iron staining. stiff.	ML	
4-6	6 4 4 3	2'	6" 6"	NA	2.2	NA		4-4.2 Dry, Grey Crushed Rock - no odor or staining (likely fell from auger)	GM	
								4.2-4.6 Very slightly moist, Dark Grey, SILT with some fine gravel, trace clay, soft. Petroleum odor, no staining	ML	
6-8	6 6 6 7	2'	1.75	NA	0.0	NA	NA	6-7.5 Slightly moist, Brown w/ grey mottling SILT with some clay, and fine gravel. no odor or staining medium stiff	ML	
8-10'	4 4 11 18	2'	2'	NA	NA	0.0	NA	8-8.9' moist, Dark Grey / Brown SILT with some fine gravel, little f-m sand, trace clay, no odor Slight staining (iron). soft	ML	
								9-10' very moist, Dark Grey-Brown F-C SAND with some Silt, and little fine gravel, no odor spotted iron staining throughout very stiff	SM	

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW-26-26
COMMENTS: 1) Drill w/ CME 850 ATV rig 2) Sample w/ 4in Split spoon		DRILLER: S. Badam INSPECTOR: A. Cook DATE: 6/18/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
10-12	5	2'	1.5'	NA	NA	0.0	NA	10 - 10.6' very slightly moist SILT, wh fm gravel, no odor or staining medium stiff.	ML	
	5									
	4									
	4			NA	NA	0.0	NA	10.6 - 11.5 very moist, fm sand with some Silt, md fc gravel. no odor. spotted iron staining ~~medium stiff~~ loose	SM	
12-14	10	10"		NA	NA		NA	12 - 12.4/13 Ac Very slightly moist - slightly moist grey (outside) dark grey (inside) WEATHERED SHALE. no odor. trace spots of iron staining very hard	GM	
	50/4							- auger ~~refusal~~ refusal ~14.5' Continue w/ air rotary to competent rock - 18.5' - 20' no dust wet mud coming out of hole		
								Well construction 21.5 - 11.5 Screen 11.5 - 9.5 Sand 9.5 - 7.5 Bentonite 7.5 - 0 Grout		

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS

PROJECT: Seneca Army Depot | CLIENT: USACOE | WELL #: MW 26-26

LOCATION: SEAD 26 | PROJECT NO: 749674.08000

INSPECTOR: A. Cooke

CHECKED BY:

DRILLING CONTRACTOR: NYEG

DRILLER: J. Bodem

DRILLING COMPLETED: 6/19/20

BORING DEPTH: 21.5'

DRILLING METHOD(S): HSA rig + rotary

BORING DIAMETER(S): 4" + 3.25"

ASSOCIATED SWMU/AOC:

POW DEPTH: 21.5'

INSTALLATION STARTED: 6/18/20

INSTALLATION COMPLETED: 6/19/20

SURFACE COMPLETION DATE:

COMPLETION CONTRACTOR/CREW: NYEG

BEDROCK CONFIRMED (Y/N?) Y

ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:

DIAMETER: 4.5" LENGTH: 5'

RISER:

TOC: See note (1) TYPE: PVC DIAMETER: 2" LENGTH: 14.5 TOR: -

SCREEN:

TSC: 11.5 TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-in

POINT OF WELL: (SILT SUMP)

YPE: BSC: POW:

GROUT:

TG: Surface TYPE: Type I Cement/Gr LENGTH: 2'

SEAL: TBS: 7.5' TYPE: chips LENGTH: 7.5'

SAND PACK: TSP: 4.5' TYPE: morie #0 LENGTH: 12'

SURFACE COLLAR:

TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS

DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:

1) Riser is BGS 11.5-0 AGS 0-+3

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

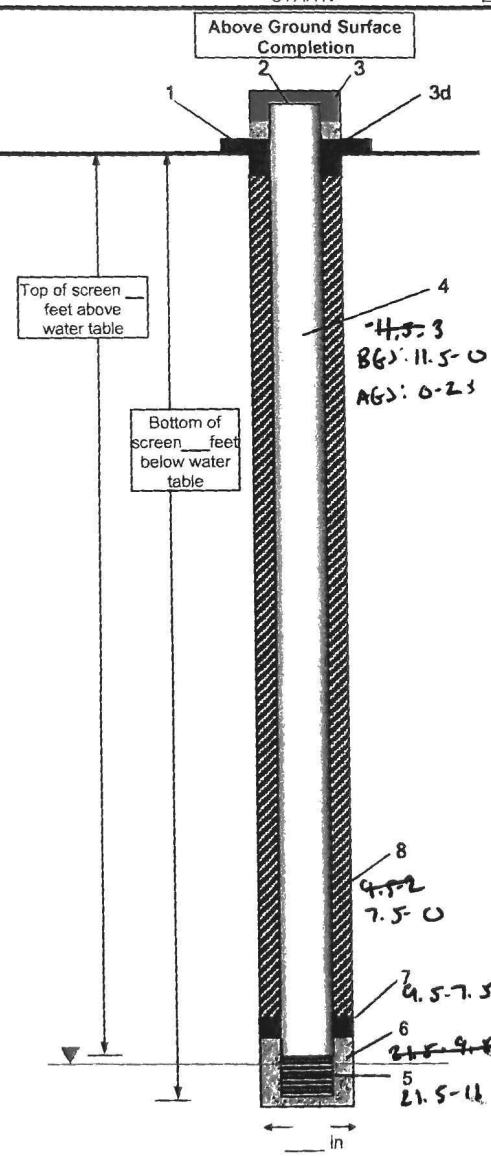
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW-26-26	1

~~*Project Name*~~ Seneca Army Depot, Romulus, NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot — LOCATION: SEAD 26
DRILLING SUBCONTRACTOR: NYEG — DRILLER: J. Iacovelli
DRILLING METHOD / EQUIPMENT: HSA + air rotary — HELPERS: A. Skinner
WATER LEVEL: START: END: — GEOLOGIST: A. Cook



DRAWING NOT TO SCALE

1- Ground elevation at well :	
2- Measuring point elevation :	
3- Surface completion casing :	
a) type / diameter	
b) height above ground	
c) length below ground	
d) type of sealant	
e) protective bollards	
4- Well casing :	PVC 12"
a) type / diameter	
b) height above ground	3
c) length below ground	11.5
d) type / quantity of sealant	-
e) well centralizers	NA
5- Well screen :	PVC 12"
a) type / diameter	
b) slot size	10-14
c) length	10'
6- Well screen filter pack :	Morie #0
a) type	
b) length	~~10'~~ 12'
7- Bentonite seal :	Pour from Surface
a) method of placement	
b) type	chips
c) length	2'
8- Grout :	Type I
a) type	
b) grout mix	grout/cement
c) method of placement	Pour from surface
d) depth (feet bgs)	2'

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW-26-27

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 6/19/20
FINISH DATE: 6/19/20
CONTRACTOR: NYEC
DRILLER: S Beckom
INSPECTOR: A-Cook
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4"	0-12	2'x2"	SS	HMR	140/30
Air rotary	3.25"	12-16.5	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
Multirae	VOC	-	0.0	1100	6/19/20	0800	6/19/20	70's Sunny

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE - NA

DATE			
SOIL AMOUNT : (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
1) no water was used

SAMPLES TAKEN: - NA
SAMPLES
DUPLICATES
MS/MSD
MRD

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW-26-27

COMMENTS:
1) Drill with CME 850 ATV Rig
2) Sample with Split Spoon

DRILLER: S. Bodem
INSPECTOR: A. Cool
DATE: 6/19/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	12 23 50/5	11"		NA	NA	0.0 0.0	NA	0-10" Dry, Grey, SILT with angular f-m Gravel, trace clay, no odor or staining 10-11" Dry, Grey, WEATHERED (highly fractured) ROCK no odor or staining. Hard.	ML GM	
2-4	23 13 10 7	2'	1.5'	NA	NA	0.0	NA	2-~~3.2~~ 2.75 Dry Grey, SILT (crushed limestone) w/m sand fine Gravel, trace m-c gravel, no odor or staining very stiff. 2.75-3.5 slightly moist Brown SILT w/ angular fine Gravel, trace clay, no odor Some vibrant iron staining in spots + fossil Brachiopod). Stiff,	ML ML	
4-6	23 8 5 4	2'	1.5	NA	NA	0.0	NA	4-4.5 Dry, Grey SILT (crushed limestone) little fine gGravel, trace Course gravel (limestone) no odor or staining. Very stiff. 4.5-5.5 Dry, Grey + Brown, SILT w/ fine gravel, trace clay no odor or staining ~~orange~~ orange staining throughout Stiff.	AL ML	
6-8	6 4 5 10	2'	1.5	NA	NA	0.0 0.0		6-6.2 Dry, Grey, SAA 4-5 4.5 No odor or staining Medium Stiff. 6.2-7.3 moist. Brown, SILT with trace fine Sand and Clay. Some fine gravel, trace m. gravel (shaley fossil- Brachiopod) no odor, orange staining throughout Soft 7.3-7.5 moist, Dark Grey WEATHERED SHALE + fossil ~~fragments~~ fragments.	ML ML GM	
8-10	18 12 12 15	2'	1.25			0.0		8-8.7 moist, Dark Brown SILT with some Clay, and fine angular gravel (shale), little fine Sand. no odor some iron staining throughout. Very Stiff. 8.7-9.25 moist wet, Dark Brown - Dark Grey SILT with fine gravel and clay, little fine Sand no odor streaks of dark orange throughout stiff.	ML AL	

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACE	BORING NO.: MW-26-27
COMMENTS: 1) Drill with CME 850 ATV Rig 2) Sample with SS		DRILLER: S. Bodor INSPECTOR: A. Cook DATE: 6/14/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
10-12'	5/5	2.5'	1.5'	NA	NA	00	BP	10-11.5 Very Slightly moist, Dark Grey to tan, WEATHERED Rock, but some Silt and little clay. No odor. Iron staining ; spots throughout. (limestone) Dense. moist at bed spots	GM	
	48									
	50/3									
								Competent rock - 14'		
								auger refusal 12, weathered rock to 14.		
								Continued w air-hammer.		
								JetScreen 16.5		
								16.5 - 6.5 Screen		
								16.5 - 4.5 Sand		
								4.5 - 2.5 Bentonite		
								2.5 - 0 Grout		

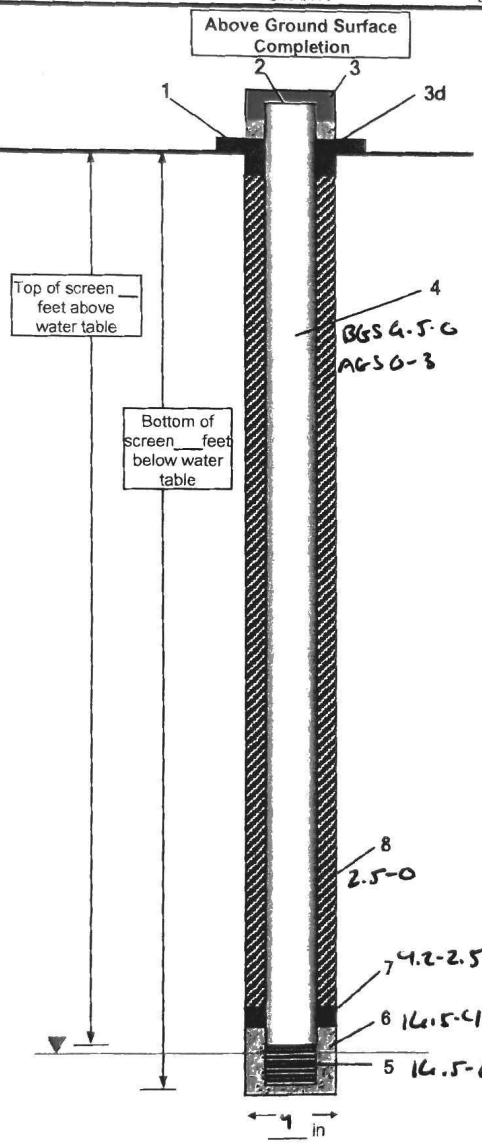
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW-26-27	1

~~*Project Name*~~ Seneca Army Depot, Romulus NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot
DRILLING SUBCONTRACTOR: NYEG
DRILLING METHOD / EQUIPMENT: HSA + air rotary
WATER LEVEL: START: END:
LOCATION: SEAD 26
DRILLER: S. Bodam
HELPERS: A. Skinner
GEOLOGIST: A. Cook



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC 12"
- b) height above ground: +3'
- c) length below ground: 4.5
- d) type / quantity of sealant: -
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC 12'
- b) slot size: 10-14
- c) length: 10'

6- Well screen filter pack :
- a) type: morie #0
- b) length: 12'

7- Bentonite seal :
- a) method of placement: Pour from surface
- b) type: Bent. chips
- c) length: 2'

8- Grout :
- a) type: Type I
- b) grout mix: Grout/cement
- c) method of placement: Pour from surface
- d) depth (feet bgs): 2.5

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW-26-27

PROJECT: Seneca Army Depot
LOCATION: SEAD 26
PROJECT NO: 749674.0000
INSPECTOR: A. Cook
CHECKED BY:

DRILLING CONTRACTOR: MEG
DRILLER: S. Bodem
DRILLING COMPLETED: 6/19/20
BORING DEPTH: 16.5'
DRILLING METHOD(S): HSA + air rotary
BORING DIAMETER(S): 4" - 3.25"
ASSOCIATED SWMU/AOC:
POW DEPTH: 16.5
INSTALLATION STARTED: 6/19/20
INSTALLATION COMPLETED: 6/19/20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW:
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5" LENGTH: 5' TOR: -

RISER:
TOC: See note (1) TYPE: PVC DIAMETER: 2" LENGTH: 9.5'

SCREEN:
TSC: 6.5' TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-14

POINT OF WELL: (SILT SUMP)
YPE: BSC: POW:

GROUT:
TG: Surface TYPE: Type I cement LENGTH: 2.5'

SEAL: TBS: 2.5 TYPE: Bent. chips LENGTH: 2'

SAND PACK: TSP: 4.5 TYPE: morie #0 LENGTH: 12'

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
(1) Riser BGS 6.5-0 AGS 0-3

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW-26-26S

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 6/22/20
FINISH DATE: 6/22/20
CONTRACTOR: NYEG
DRILLER: S. Boden
INSPECTOR: A. Cook
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4"	0-15	2x2"	SS	HHR	140/30
4½" rotary	3.25"	15-17	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
MiniRae	VOC	-	0.1	1040	6/22/20	0930	6/22/20	80's sunny

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE NA

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
1) no water added to well

SAMPLES TAKEN: NA

SAMPLES	
DUPLICATES	
MS/MSD	
MRD	

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW-26-28S
COMMENTS: 1) Drill with ATV CME 850 Rig 2) Sample with Split Spoon		DRILLER: S. Boden INSPECTOR: A. Cook DATE: 6/22/20

DEPTH (ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	4 11 11 12	2'	1.25	NA	NA	0.0	NA	0 - .75 Dry / Grey, GRAVEL (m-c) angular, with some SILT, and fine gravel, no odor or staining (gravel is shale) little organics (roots)	GM	
						0.0		.75 - 1.25 Dry Grey, SILT with some fine angular gravel and trace clay. no odor some iron staining throughout Stiff. Stiff.	ML	
2-4'	3 4 5 7	2'	.75	NA	NA	0.0	NA	2 - 2.75 very slightly ~~moist~~ Grey, SILT with little fine angular gravel, little - trace clay, no odor, iron stainins throughout medium Stiff.	ML	
4-6'	6 2 3 2	2'	1.25	NA	NA	0.0	NA	4 - 5.25 slightly moist, Brown, SILT with some medium angular Gravel, and little fine angular gravel, little clay, no odor, iron staining throughout Soft.	ML	
		2'	6"	NA	NA	0.0	NA	6 - 6.6' moist - Slightly moist. Dark Brown ~~Stiff~~ SILT with some clay and course Gravel, trace fine gravel. no odor minimal iron staining Soft.	ML	
6-8'	4 4 16 5	2'	1.25	NA	NA		NA	8 - 9.25 moist - Slightly moist. Brown, SILT with some clay, and little f-c angular gravel, no odor, little iron staining. less clay towards bottom. more c gravel towards top. Medium Stiff	ML	
8-10'	7 5 6 9									
10-12'	15 11 12 7	2'	1.5	NA	NA		NA	10 - 11.5 ~~Brown~~ Dry - Very Slightly moist, Brown, SILT with f-~~m~~ angular Gravel, little-trace m-c gravel, trace fine Sand at bottom. Stiff.	ML	

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW-24-285
COMMENTS: 1) Drill using ATV, CME 850 Rig 2) Sample with split spoon		DRILLER: S. Bucklew INSPECTOR: A. Cook DATE: 6/22/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
12-14'	6 14 12 8	2'	1.5	NA	NA	OU	NA	12-13.5 moist-wet (towards bottom), Dark Grey-Grey, VERY WEATHERED SHALE with Silt, little-trace fine Sand and Clay, no odor, bright iron staining throughout. Medium stiff	GM	
14-16'	50/6	6"	6"	NA	NA	OU	NA	14-14.6 Dry Grey, ~~Crossrock~~ CRUSHED Rock, with little Silt, no odor or staining (rock is limestone)	GM	
								* Auger refusal at 15' - begin to air-hammer, minimal dust is coming out - 16' more dust		
								Competent rock 15.5' as we continue to air-hammer		
								Well Construction 17-7 Screen 17-5 Sand 5-3 Bentonite 3-0 Grout 7-3 Riser		

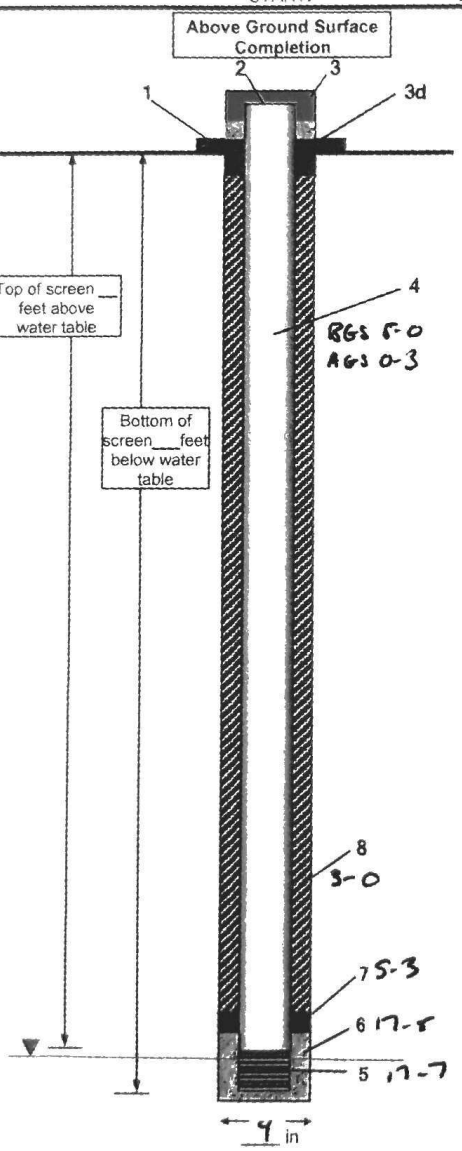
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW-26-28S	1

~~*Project Name*~~ Seneca Army Depot. Romulus, NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot — LOCATION: SEAD 26
DRILLING SUBCONTRACTOR: NYEC — DRILLER: S. Boden
DRILLING METHOD / EQUIPMENT: HSA + cmr rotary — HELPERS: A. Skinner
WATER LEVEL: — START: — END: — GEOLOGIST: A Crandall



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC 12"
- b) height above ground: - 1.3'
- c) length below ground
- d) type / quantity of sealant: -
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC 12"
- b) slot size: 10-14
- c) length: 10'

6- Well screen filter pack :
- a) type: morie #0
- b) length: 12'

7- Bentonite seal :
- a) method of placement: Pour from Surface
- b) type: Bent. Chips
- c) length: 2'

8- Grout :
- a) type: Type I
- b) grout mix: grout/cement
- c) method of placement: pour from Surface
- d) depth (feet bgs)

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW-26-20S

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

PROJECT NO: 749674.08000
INSPECTOR: A. Cook
CHECKED BY:

DRILLING CONTRACTOR: NYEG
DRILLER: S. Bockm
DRILLING COMPLETED: 6/22/20
BORING DEPTH:
DRILLING METHOD(S): HSA + air rotary
BORING DIAMETER(S): 4" + 3.25'
ASSOCIATED SWMU/AOC:

POW DEPTH:
INSTALLATION STARTED: 6/22/20
INSTALLATION COMPLETED: 6/22/20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW:
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:
DIAMETER: ~2" 4.5" LENGTH: 5' TOR: -

RISER:
TOC: See note (1) TYPE: PVC DIAMETER: 2" LENGTH: 10'

SCREEN:
TSC: TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-in

POINT OF WELL: (SILT SUMP)
YPE: BSC: POW:

GROUT:
TG: Surface TYPE: Type I Cement LENGTH: 2' 3'

SEAL: TBS: 3' TYPE: Bent. Chips LENGTH: 2'

SAND PACK: TSP: 5' TYPE: Morie # 0 LENGTH: 1

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
1) Riser is BGS: AGS: Total of

*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACoE	BORING NO.: MW26-28D
COMMENTS: (1) Roller bit w/ water	DRILLER: J. Ranschau (CMEG)	
	INSPECTOR: E. Ashton (Parsons)	
	DATE: 7-7-20	

DEPTH (Ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0'	NA	NA						* See log for MW26-28S for lithology for well. *	NA	NA
								- Roller bit adv w/ water to 18'bgs and set drill casing and grouted in place		
								- Installed casing into competent rock.		
								- No significant water lost during installation of casing to formation.		
18'										

CORE BORING REPORT

PARSONS	CLIENT: USACOE	BORING #: MW 26-25D

PROJECT: Seneca Army Dept
SWMU # (AREA): SEAD-26
SOP NO.:

DATE CORING STARTED: 7-9-20
DATE CORING COMPLETED: 7-9-20
CONTRACTOR: MEC / Parsons
DRILLER: J. Rauscher (MEC)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST: " "
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED: —
OVERBURDEN THICKNESS: —
GALLONS OF WATER USED

MW: Rec 3000 PID

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
	5'	0.0 ppm	1100

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
AH	-	Continuous	3 7/8"	NA

COMMENTS:
- Air-hammered borehole

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
18'	NA	NA	0.0 ppm	NA	NA	NA	- Start to drill in competent rock at ≈ 18' bgs. - Air-hammered, as approved by USACOE. - No water used - 18' → 21' = Dry, soil cuttings - shale - 21' → 26' = Dry, Soil cuttings, Shale - 26' - 31' = Dry, soil cuttings, shale - 31' - 36' = Dry, soil cuttings, shale - 36' - 41' = Dry, soil cuttings, shale. - 41' - 46' = Dry, soil cuttings, shale. Let borehole settle for ~1 hour & hour cup then blow borehole out w/ air to see if water flowed in. Dry. Advancing. - 46' - 51' = Dry, soil cuttings, shale. - 51' - 100' = Dry, soil cuttings, shale.
100'							

INVESTIGATION DERIVED WASTE: - NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

- Stopped drilling at 100' bgs & installed well screens from surface bgs. Logic is if any water bearing zones exist and have a low yield, then all will be screened. Same logic as at MW25-31D & MW26-32D.

BEDROCK MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW 26-280

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

PROJECT NO: 749674 08 00
INSPECTOR: E. Ashton (Parsons)
CHECKED BY:

DRILLING CONTRACTOR: MEG
DRILLER: J. Ranscht
DRILLING COMPLETED: 7-9-20
BORING DEPTH: 140'
DRILLING METHOD(S): Air-hammer
BORING DIAMETER(S): 3 7/8"

POW DEPTH (ft): 140'
INSTALLATION STARTED: 7-9-20
INSTALLATION COMPLETED: 7-10-20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW: MEG
BEDROCK CONFIRMED (Y/N?) Y

PROTECTIVE SURFACE CASING – NA
DIAMETER (ft): LENGTH (ft):

RISER
TYPE: PVC
DIAMETER(in): 2
TR (ft): 0 (2)
LENGTH (ft): 52.5' (2)

SURFACE COLLAR
TYPE:
THICKNESS OF CENTER (ft):
RADIUS (ft):
THICKNESS OF EDGE (in):

SCREEN
TYPE: PVC
DIAMETER (in): 2
SLOT SIZE: 10-slot
TSC (ft): 50
LENGTH (ft): 50

OUTER CASING
TYPE: steel drill casing
DIAMETER (in): 4
POC (ft): 18
TC (ft): 0 (1)
LENGTH (ft): 18

POINT OF WELL (SILT SUMP) – NA
TYPE:
BSC (ft):
POW(ft):

GROUT
TYPE: Cement/bent.
TG (ft): 0
LENGTH (ft): ~~35~~ 35

SEAL
TYPE: Bent. chips
TBS (ft): ~~35~~ 35
LENGTH (ft): 10

SAND PACK
FINE SAND TYPE: Morie #00
TSP (ft): 45
LENGTH (ft): 2
COARSE SAND TYPE: Morie #0
TSP (ft): 47
LENGTH (ft): 53

ACRONYMS

TR	Top of Riser	BSC	Bottom of Screen	TG	Top of Grout
TSC	Top of Screen	POW	Point of Well	TBS	Top of Bentonite Seal
BGD	Background	TSP	Top of Sand Pack		

COMMENTS:
(1.) no water used for drilling
(2.) A piece ≈ 6" long of steel wrapped in 3 m electrical tape broke off at ≈ 65 to 70' bgs. in morie #0 filter sand. Part of sand pack

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

(6) Added ≈ 3 gals of water to borehole during bent. install. Did not recover.

(1) Outer casing was set into competent rock at 18' bgs and acts as a protective casing
(2) Riser extends 2.5' above surface
(3)
(4) Centralizer @ 48-49')
(5) see note on core log report about borehole and screen settling

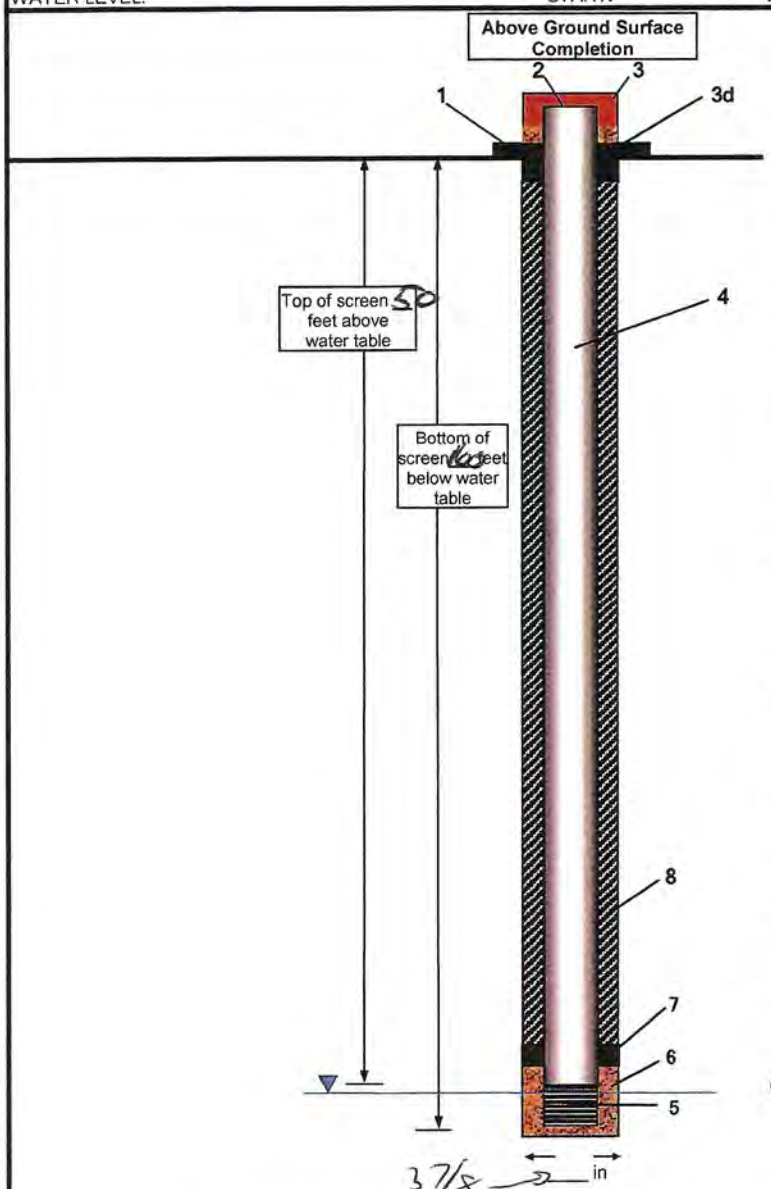
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW26-28D	1

~~Project Name~~ Seneca Army Depot Romulus, NY

Location **Groundwater Monitoring Well** SEAD 26

WELL INSTALLATION DATA RECORD

PROJECT:	Seneca Army Depot Romulus, NY	LOCATION:	SEAD 26
DRILLING SUBCONTRACTOR:	MPE6	DRILLER:	J. Rauscher
DRILLING METHOD / EQUIPMENT:	ATV, air-hammer	HELPERS:	M. Trevett
WATER LEVEL:	START: END:	GEOLOGIST:	E. Aslin



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing : _____
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: 2.5'
- c) length below ground: 50'
- d) type / quantity of sealant: —
- e) well centralizers: 45-49'

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-in
- c) length: 50'

6- Well screen filter pack :
- a) type: Morie #00, Morie #0
- b) length: 2', 53'

7- Bentonite seal :
- a) method of placement: free pour from surface
- b) type: chips
- c) length: 10'

8- Grout :
- a) type: Type I
- b) grout mix: cement / bent
- c) method of placement: Tremie
- d) depth (feet bgs): ~~0-38~~ 0-35'

(4) outer casing
- 0-18' bgs
- grouted in place
- steel drill casing (4-in dia)
- Type I grout (cement/bent)

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW-26-29

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 6/22/20
FINISH DATE: 6/23/20
CONTRACTOR: NYEG
DRILLER: S. Bodam
INSPECTOR: A. Cook
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4	0 -	2 x 2'	SS	H/HR	140 30
Direct Push	3.25"	-	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
multirae	VOC	-	0.1	0830	6/23/20	0750	6/22/20	83 sunny

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE - NA

DATE			
SOIL AMOUNT : (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:

1) No water used

SAMPLES TAKEN: - NA

SAMPLES
DUPLICATES
MS/MSD
MRD

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW-26-29

COMMENTS:
1) Drill w/ ATV CME 850 Rig
2) Sample with Split spoon

DRILLER: S. Bodam
INSPECTOR: A. Cook
DATE: 6/22/20

DEPTH (FT)	SAMPLING BLOWS PER 6 INCHES	SAMPLING PENETRATION RANGE (FEET)	SAMPLING RECOVERY RANGE (FEET)	SAMPLE DEPTH INT (FEET)	SAMPLE NO.	SAMPLE VOC	SAMPLE RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	3 4 7 8	2'	NA 1'	NA	NA		NA	0-1' Dry Light Brown, SILT with some little fine-angular Gravel, trace Coarse gravel, no odor or staining, trace organics at top 3" (roots) medium stiff.	ML	
2-4'	83 42 4 3 4	2'	8"	NA	NA	0.0	NA	2-2.8 Slightly moist, medium Brown, SILT with little fine Gravel, trace C. gravel & clay, no odor, little iron staining, soft.	ML	
4-6'	4 4 4 6	2'	1'	NA	NA	0.0	NA	4-4.5' Slightly-moist - moist (bottom 2") Brown. SILT with fine angular Gravel, trace clay, no odor little iron staining (fill) Soft, medium stiff	ML	
6-8'	6 6 7 7	2'	4"	NA	NA	0.0	NA	6-6.4 Slightly moist, Brown-Grey Brown, SILT with little fine angular Gravel and clay - trace fine Sand (fill) medium stiff	ML	
8-10'	5 4 5 4	2'	1.8'	NA	NA	0.0	NA	8-8.6 Slightly moist, Brown-Tan. SILT with little fine Gravel, trace clay, no odor little iron staining (fill) medium stiff.	ML	
								8.6-9.8 moist, Brown. SILT with fine Gravel, little fine Sand, trace Coarse Sand and clay. no odor. little iron Staining medium stiff.	ML	
10-12'	50/5	5"	5"	NA	NA	0.0	NA	10-10.5 Slightly moist Tan-Brown SILT With some Coarse Gravel (limestone) and little fine gravel, trace clay, no odor or staining. Hard.	ML	
12-14'	50/2	2"	2"	NA	NA	0.0	NA	12-12.2 moist, Grey, WEATHERED ROCK hard. no odor or staining	GM	

Well Construction
17-7 Screen
17-5 Sand
5-2 Bentonite
2-0 Grout

*Competent Rock - 14'
*Fill ends ~ 9-10'

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACoE	WELL #: MW-26-29

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

PROJECT NO: 749674.0000
INSPECTOR: A. Cook
CHECKED BY:

DRILLING CONTRACTOR: NYEG
DRILLER: S. Boden
DRILLING COMPLETED: 6/23/20
BORING DEPTH: 15'
DRILLING METHOD(S): HSA + air rotary
BORING DIAMETER(S): 4" 3.25'
ASSOCIATED SWMU/AOC:

POW DEPTH: 17'
INSTALLATION STARTED: 6/22/20
INSTALLATION COMPLETED: 6/23/20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW:
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5" LENGTH: 5' TOR: —

RISER:
TOC: Secured(1) TYPE: PVC DIAMETER: 2" LENGTH: 8'

SCREEN:
TSC: 8' TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10 w

POINT OF WELL: (SILT SUMP)
YPE: BSC: POW:

GROUT:
TG: Surface TYPE: Type I grout cement LENGTH: 2'

SEAL: TBS: 2' TYPE: Bent. Chips LENGTH: 2'

SAND PACK: TSP: 1' TYPE: morie #0 LENGTH: 12'

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
1) PVC Riser BGS: 5 AGS: 3 Total: 8

*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

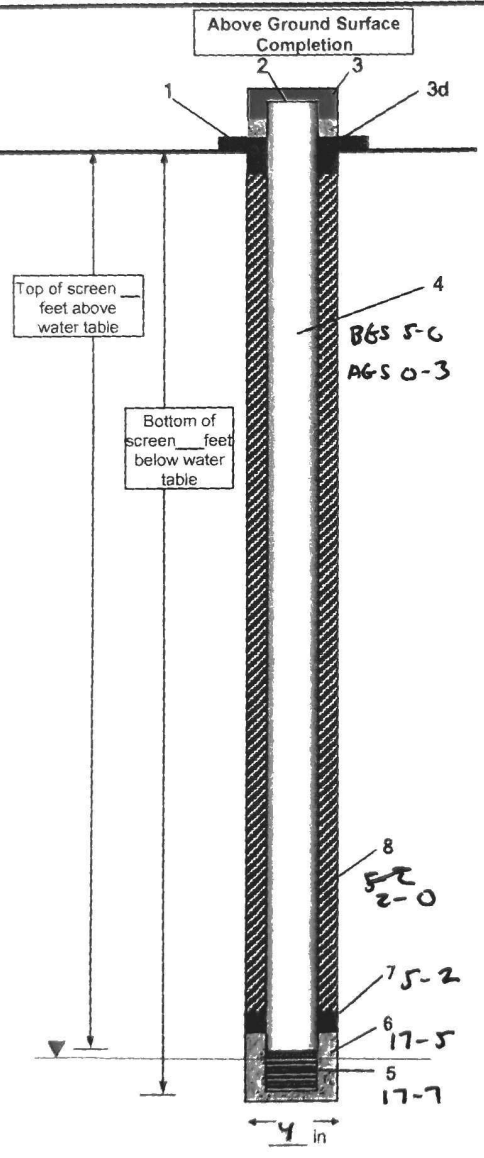
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW-26-29	1

~~Project Name~~ Seneca Army Depot
Romulus, NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT : Seneca Army Depot
DRILLING SUBCONTRACTOR : NYEG
DRILLING METHOD / EQUIPMENT : HSA Air Rotary
WATER LEVEL: START: END:
LOCATION : SEAD 26
DRILLER: B. Boden
HELPERS: ~~Brit~~ A. Skinner
GEOLOGIST: D. Loop



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: ≈ 3'
- c) length below ground
- d) type / quantity of sealant: NA
- e) well centralizers: —

5- Well screen :
- a) type / diameter: PVC 2"
- b) slot size: 10-H
- c) length: 10'

6- Well screen filter pack :
- a) type: Morie #0
- b) length: 12'

7- Bentonite seal :
- a) method of placement: Poured by
- b) type: Bent. Chips
- c) length: 2' 3"

8- Grout :
- a) type: Type I
- b) grout mix: cement/grout
- c) method of placement: Poured from surface
- d) depth (feet bgs): 2

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MV-26-30

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 6/23/20
FINISH DATE: 6/23/20
CONTRACTOR: NYEG
DRILLER: S. Bodem
INSPECTOR: A. Cook
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4	0-11	2x2"	SS	HHR	140/30
air rotary	5.25"	11-16	-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
Multirae	VOC	-	0.0	0950	6/23/20	6/23/20 0815		80s Hot Sunny Windy

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE -NA

DATE			
SOIL AMOUNT: (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
1) NO water added

SAMPLES TAKEN: -NA

SAMPLES	
DUPLICATES	
MS/MSD	
MRD	

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW-26-30

COMMENTS:
1) Drill with ATV CME 850 Rig
2) Sample with Splitspoon

DRILLER: S. Bodem
INSPECTOR: D. Cook
DATE: 6/23/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	5 8 8 5	2'	1'	NA	NA	0.0	NR	0-.2" slightly moist. Brown, SILT w/ Organics (roots) no odor, orange staining medium stiff.	ML	
						0.0		.2-.5 Very Slightly moist Grey Brown, SILT with f angular Gravel trace medium Gravel, no odor, very little iron staining stiff.	ML	
						0.0		.5-1' Dry, Grey, CRUSHED ROCK w/ little Silt, no odor trace iron staining medium stiff.	GM	
2-4'	4 6 5 5	2'	1'	NA				1-3' Very Slightly moist, Grey + Brown, CRUSHED ROCK w/ some Silt and trace clay, no odor little iron staining medium stiff	GM	
4-6'	5 8 5 6	2'	1'	NA	NA	0.0	NR	4-5' Dry, Grey + Brown, ~~CRUSHED~~ course Gravel, with some f-m Gravel and little Silt with trace Clay, no odor or staining medium stiff.	GM	
								5-6.75 Slightly moist Mottled Brown, Grey, orange, SILT with little fine Gravel and clay, no odor, some iron staining, stiff	ML	
6-8'	6 16 30 50/5	1.5' 1' 11"	2'	NA	NA	0.0	NR	6.75-8' very Slightly moist, Grey, WEATHERED (Till) SHALE with little Silt, no odor, some Limonite iron staining, hard.	BR GM GM	
8-10'	7 14 35 50/3	27"	1.5'	NA	NA	0.0	NR	8-9.5' Dry, Grey, Brown, WEATHERED SHALE with some Silt no odor, very little iron staining. hard.	GM	
								-refusal with Spoon and auger -Competent @ 12 ft', confirmed by air-hammer -no frit encountered		

Well Construction
16-6 Screen
16-4 Sand
4-2 Bentonite
2-0 Grout

Fill ends ~8'
competent at 12'

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW-26-30

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

PROJECT NO: 749674.0800
INSPECTOR: Arcoon
CHECKED BY:

DRILLING CONTRACTOR: NYEG
DRILLER: S. Bodem
DRILLING COMPLETED: 6/23/20
BORING DEPTH: 16'
DRILLING METHOD(S): HSA + Air rotary
BORING DIAMETER(S): 4" 3.25"
ASSOCIATED SWMU/AOC:

POW DEPTH: 16'
INSTALLATION STARTED: 6/23/20
INSTALLATION COMPLETED: 6/23/20
SURFACE COMPLETION DATE:
COMPLETION CONTRACTOR/CREW:
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION:

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5" LENGTH: 5' TOR: -

RISER:
TOC: See note (1) TYPE: PVC DIAMETER: 2" LENGTH:

SCREEN:
TSC: 6' TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-N

POINT OF WELL: (SILT SUMP)
YPE: BSC: POW:

GROUT:
TG: Surface TYPE: Type I Portland LENGTH: 2'

SEAL: TBS: 2 TYPE: Bent. Chips LENGTH: 2'

SAND PACK: TSP: 4 TYPE: Morie #0 LENGTH: 12'

SURFACE COLLAR:
TYPE: RADIUS: THICKNESS CENTER: THICKNESS EDGE:

CENTRALIZER DEPTHS
DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4:

COMMENTS:
1) Riser is BGS: 6' AGS: 3' Total 9'

*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW-26-30	1

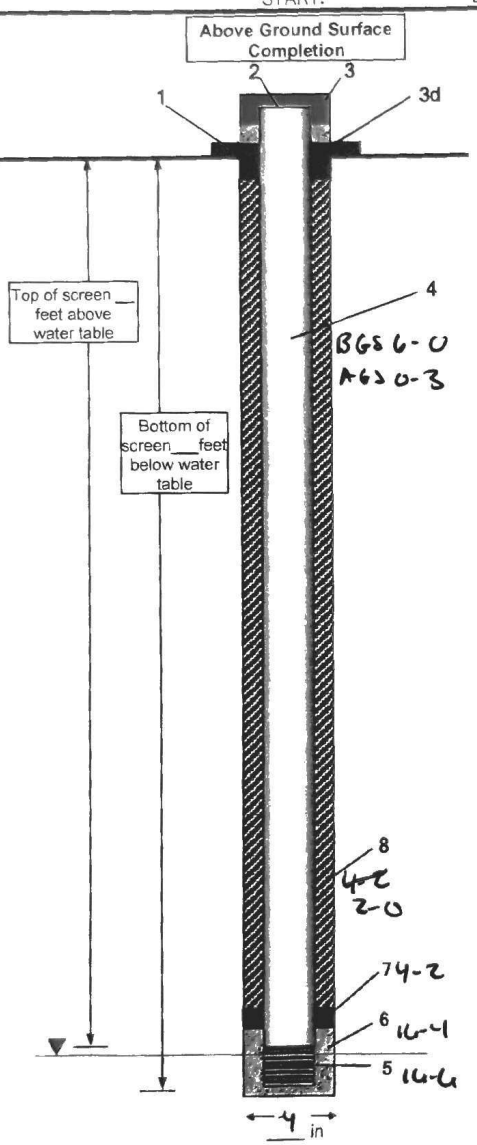
~~*Project Name*~~ Seneca Army Depot, Romulus, NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot
DRILLING SUBCONTRACTOR: NYEG
DRILLING METHOD / EQUIPMENT: HSA + Air-rotary
WATER LEVEL: START: END:

LOCATION: SEAD 26
DRILLER: S. Beckom
HELPERS: A. Skinner
GEOLOGIST: A. Codd



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC 12"
- b) height above ground: 3
- c) length below ground: 6
- d) type / quantity of sealant: -
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC 12"
- b) slot size: 10-M
- c) length: 10'

6- Well screen filter pack :
- a) type: Morie #0
- b) length: 12'

7- Bentonite seal :
- a) method of placement: Pour from surface
- b) type: Bent. Chips
- c) length: 3'

8- Grout :
- a) type: Type I
- b) grout mix: Grout/cement
- c) method of placement: Pour from surface
- d) depth (feet bgs): 2-0

OVERBURDEN BORING REPORT

PARSONS | CLIENT: USACOE | BORING NO.: MW-30 2631

PROJECT: Seneca Army Depot
SWMU # (AREA): SEAD 26
SOP NO.:

START DATE: 6/23/20
FINISH DATE: 6/ /20
CONTRACTOR: NYEG
DRILLER: S. Bodem
INSPECTOR: A. Cook
CHECKED BY:
CHECK DATE:
BORING CONVERTED TO MW? (Y) N

DRILLING SUMMARY

DRILLING METHOD	HOLE DIA.(ft)	DEPTH INTERVAL (ft)	SAMPLER SIZE	SAMPLER TYPE	HAMMER TYPE	HAMMER WT/FALL
HSA	4"		2"x2"	SS	HMR	140/30
Air rotary	3.25"		-	-	-	-

DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRSLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	5I	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND READING	BACKGROUND TIME	BACKGROUND DATE	CALIBRATION TIME	CALIBRATION DATE	WEATHER (TEMP., WIND, ETC.)
multirae	VOC	-	0.1	1230	6/23/20	0818	6/23/20	80's sunny

MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE - NA

DATE			
SOIL AMOUNT : (fraction of drum)			
DRUM #, LOCATION:			

COMMENTS:
1) no water added

SAMPLES TAKEN: - NA

SAMPLES	
DUPLICATES	
MS/MSD	
MRD	

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW-26-31
COMMENTS: 1) Drilling with an ATV based CME 850 rig 2) Sampling with Split spoon		DRILLER: S. Bodem INSPECTOR: A. Codd DATE: 6/23/20

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0-2'	4 9 13 17	2'	1.5'	NA	NA	0.0	NA	0-.3 Slightly moist, Brown, SILT with + trace fine Gravel and organics (rootlet mass) medium stiff	ML	
						0.0		.3 - 1.8 Dry, Grey-Brown medium Gravel with Silt and trace organics no odor or staining Stiff	GM	
2-4	7 9 3 4 7					0.0		1.8-1.4 Dry, Grey, CRUSHED ROCK with little fine Gravel and trace Coarse (limestone) no odor or staining, medium stiff.	GM	
						0.0		1.4-1.5 Black, Dry, SILT with fine Gravel, slight odor, no staining (wet rock black) salt.	ML	
2-4	4 M5 54	2'	1.75	NA	NA	0.0	NA	2-2.5 Dry, Grey, crushed Rock with (a GRAVEL (angular) and Silt, no odor or staining loose.	GM GW	
						0.0		2.5-3.75 Slightly moist, Brown, SILT with fine Angular - Sub angular Gravel, trace clay and medium gravel, no odor some iron staining. Loose. Soft. (fill)	GM	
4-6	4 50/5	14"	8"	NA	NA	0.0	NA	4-4.82 Dry, Grey (rock) and Brown (soil) & Concrete (fill) (fine) with little Silt no odor or staining loose	GM	
6-8	50/1	1	0"	NA	NA	NA	NA	4.2-4.4 Very moist, Brown, f-C SAND with some Silt, trace Clay, no odor very Dense	SM	
								* Metal (Steel) piece fragments coming out of hole. Switch to roller bit minimal dust in the beginning		

Well Construction
15.5 Sand Screen
15-3 Sand Sand
3-1 Bentonite
1-0 Grout

Refusal - 4.5
Competent Rock 9'

OVERBURDEN MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACoE	WELL #: MW-26-31

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

PROJECT NO: 749674.08000
INSPECTOR: A. Cook
CHECKED BY: _____

DRILLING CONTRACTOR: NYEG
DRILLER: S. Bodam
DRILLING COMPLETED: 6/1 1
BORING DEPTH: _____
DRILLING METHOD(S): HSA + Air rotary
BORING DIAMETER(S): 4" 3.25"
ASSOCIATED SWMU/AOC: _____

POW DEPTH: _____
INSTALLATION STARTED: 6/23/26
INSTALLATION COMPLETED: 6/1/20
SURFACE COMPLETION DATE: _____
COMPLETION CONTRACTOR/CREW: _____
BEDROCK CONFIRMED (Y/N?) Y
ESTIMATED GROUND ELEVATION: _____

PROTECTIVE SURFACE CASING:
DIAMETER: 4.5'' LENGTH: 5' TOR: —

RISER:
TOC: See note(1) TYPE: PVC DIAMETER: 2" LENGTH: _____

SCREEN:
TSC: _____ TYPE: PVC DIAMETER: 2" LENGTH: 10' SLOT SIZE: 10-14

POINT OF WELL: (SILT SUMP)
YPE: _____ BSC: _____ POW: _____

GROUT:
TG: Surface TYPE: Type I grout/cement LENGTH: 2' 1'

SEAL: TBS: 1 TYPE: Bent chips LENGTH: 2'

SAND PACK: TSP: 3 TYPE: morie # 0 LENGTH: 12'

SURFACE COLLAR: -NA-
TYPE: _____ RADIUS: _____ THICKNESS CENTER: _____ THICKNESS EDGE: _____

CENTRALIZER DEPTHS -NA-
DEPTH 1: _____ DEPTH 2: _____ DEPTH 3: _____ DEPTH 4: _____

COMMENTS:
1) Riser is BGS: 5 AGS: 3 Total: 8'

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW-26-31	1

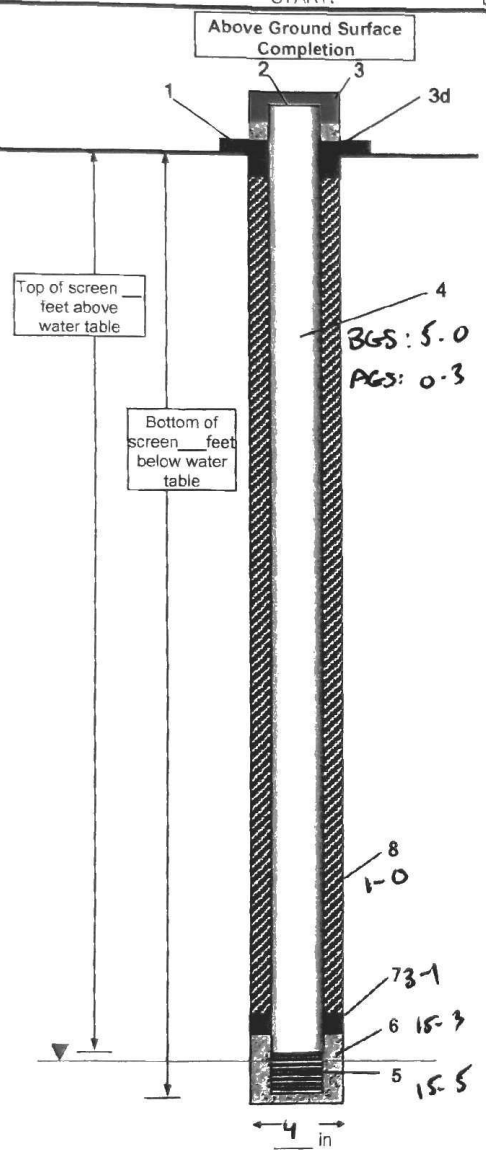
~~Project Name~~ Seneca Army Depot.
Romulus NY

Location Groundwater Monitoring Well

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot
DRILLING SUBCONTRACTOR: NYEG
DRILLING METHOD / EQUIPMENT: HSA + Air-rotary
WATER LEVEL: START: END:

LOCATION: SEAD 26
DRILLER: S. Bodem
HELPERS: A. Jimmo
GEOLOGIST: B. Cook



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC/2"
- b) height above ground: 3'
- c) length below ground: 5'
- d) type / quantity of sealant: -
- e) well centralizers: NA

5- Well screen :
- a) type / diameter: PVC/2"
- b) slot size: 10-;4
- c) length: 10'

6- Well screen filter pack :
- a) type: Morie H O
- b) length: 12'

7- Bentonite seal :
- a) method of placement: Pour from surface
- b) type: Bent. chips
- c) length: 2'

8- Grout :
- a) type: Type I
- b) grout mix: Grout/cement
- c) method of placement: Pour from surface
- d) depth (feet bgs): 1'

BEDROCK MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW 26-320

PROJECT:	Seneca Army Depot	PROJECT NO:	749674.0800
SWMU # (AREA):	SEAD-26	INSPECTOR:	E. Ashton (Parsons)
SOP NO.:		CHECKED BY:	

DRILLING CONTRACTOR:	MEG	POW DEPTH (ft):	79'
DRILLER:	J. Ranscher	INSTALLATION STARTED:	7-8-20
DRILLING COMPLETED:	7-8-20	INSTALLATION COMPLETED:	7-9-20
BORING DEPTH:	79'	SURFACE COMPLETION DATE:	
DRILLING METHOD(S):	air-hammer	COMPLETION CONTRACTOR/CREW:	MEG
BORING DIAMETER(S):	3 7/8"	BEDROCK CONFIRMED (Y/N?)	Y

PROTECTIVE SURFACE CASING – NA

DIAMETER (ft): _____ LENGTH (ft): _____

RISER

TYPE: PVC TR (ft): 0 (2)

DIAMETER(in): 2 LENGTH (ft): 40.9 ~~44.5~~ (2)

SURFACE COLLAR

TYPE: _____ RADIUS (ft): _____

THICKNESS OF CENTER (ft): _____ THICKNESS OF EDGE (in): _____

SCREEN

TYPE: PVC TSC (ft): 39

DIAMETER (in): 2 SLOT SIZE: 10-in LENGTH (ft): 40

OUTER CASING

TYPE: steel drill casing TC (ft): 0 (1)

DIAMETER (in): 4 POC (ft): 8 LENGTH (ft): 8

POINT OF WELL (SILT SUMP) – NA

TYPE: _____ BSC (ft): _____ POW(ft): _____

GROUT

TYPE: cement/bent. TG (ft): ~~30~~ 0 LENGTH (ft): 30'

SEAL

TYPE: Bent. chips TBS (ft): 30 LENGTH (ft): 5

SAND PACK

FINE SAND TYPE: morie #00 TSP (ft): 35 LENGTH (ft): 2

COARSE SAND TYPE: morie #0 TSP (ft): 37 LENGTH (ft): 42

ACRONYMS

TR	Top of Riser	BSC	Bottom of Screen	TG	Top of Grout
TSC	Top of Screen	POW	Point of Well	TBS	Top of Bentonite Seal
BGD	Background	TSP	Top of Sand Pack		

COMMENTS: (1.) no water used for drilling. Added some water to clean out borehole, but all was recovered

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

(1.) Outer casing was set into competent rock at 8' bgs and acts as a protective casing

(2.) Riser extends 1.9' above surface

(3.)

(4.) Centralizer @ 37-38')

(5.) see note on core boring report about water in borehole and screen setting.

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACOE	BORING NO.: MW26-320
COMMENTS: (1) Roller bit w/ water		DRILLER: J. Ranscha (CAGE-G)
		INSPECTOR: E. Hsiao (Parsons)
		DATE: 7-7-20

DEPTH (Ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0	NA							* see log of MW26-16 for lithology for well. *	NA	NA
								- Roller bit w/ water to 8'bgs and set drill casing and grouted in place		
								- no significant water lost to formation during installation of drill casing.		
								- installed casing into competent rock		
8'										

CORE BORING REPORT

PARSONS

CLIENT: USACOE

BORING #: MW 26-320

PROJECT: Seneca Army Depot

SWMU # (AREA): SEAD 26

SOP NO.:

DATE CORING STARTED: 7-8-20

DATE CORING COMPLETED: 7-8-20

CONTRACTOR: NYEG / Parsons

DRILLER: J. Rauscher (NYEG)

INSPECTOR: E. Ashton (Parsons)

GEOLOGIST: "

CHECKED BY:

DATE CHECKED:

TOTAL FOOTAGE CORED: —

OVERBURDEN THICKNESS: —

GALLONS OF WATER USED

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
(min. Rae 3000 PID) →	5'	0.0ppm	0915

COMMENTS: - air hammered borehole.

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
AH	—	continuous	3 7/8"	NA

DEPTH FEET	RUN RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)
8'	NA	NA	0.0 ppm	NA	NA	NA
79.0, 19.0	↓	↓	↓	↓	↓	↓

BEDROCK/ CORE DESCRIPTIONS AND REMARKS
(color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)

- start to drill in competent rock at 8' bgs.
  - Air-hammered, as approved by USACOE.
- no water used
- soil cutting dry from 8-40 bgs - shale
- minor wet zone at 41 bgs, then dry again. - shale
- 42 to 71' bgs - dry from soil cuttings. - shale.
- ~~stopped drilling at 71' bgs and left borehole~~
- stopped drilling at 71' bgs, waited for a short time to see if water came into borehole. Blew out borehole and little water blew out. Decide to drill to 79.0 and install 40 ft of well screen from 39.0-79.0' bgs. Catching water zone at 41 bgs & any other zones deeper. Wait to get some good water zone. Same logic as for MW 25-310.

INVESTIGATION DERIVED WASTE : - NA

DATE		
SOIL AMOUNT (fraction of drum)		
DRUM #, LOCATION		

- add water to borehole to clear out. recovered all water injected.
- 71-79', soil cuttings dry. shale.

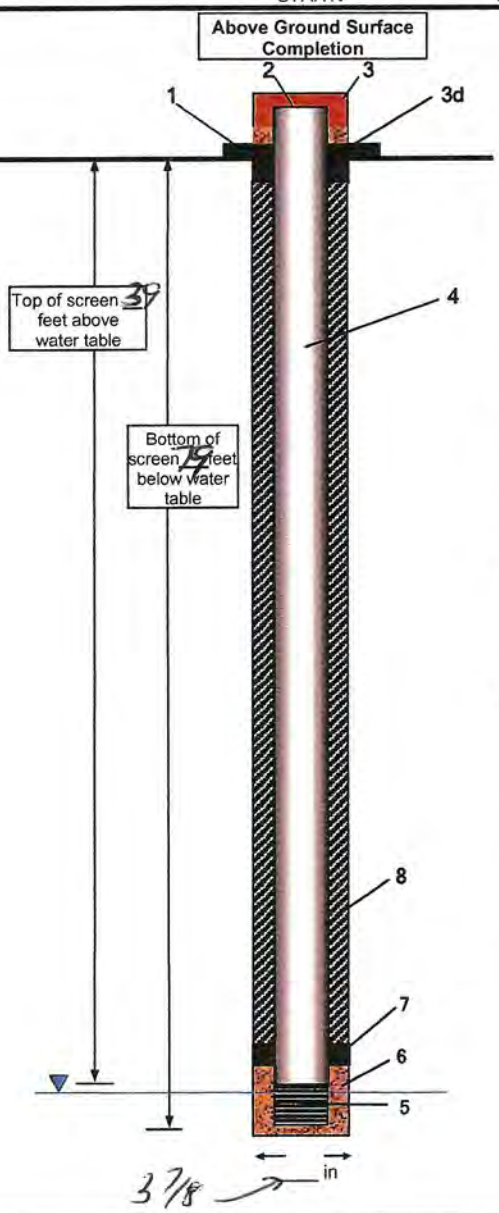
CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW26-320	1

~~Project Name~~ Seneca Army Depot Romulus, NY

Location **Groundwater Monitoring Well** SEAD 26

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY
LOCATION: SEAD 26
DRILLING SUBCONTRACTOR: NYEC
DRILLER: J. Ranscher
DRILLING METHOD / EQUIPMENT: ATV; air-hammer
HELPERS: A. Skinner
WATER LEVEL: START: END:
GEOLOGIST: E. Asleson



DRAWING NOT TO SCALE

1- Ground elevation at well : _____

2- Measuring point elevation : _____

3- Surface completion casing : _____
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: 1.9'
- c) length below ground: 39'
- d) type / quantity of sealant: —
- e) well centralizers: ~~37.8~~ 37-38'

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-in
- c) length: 40'

6- Well screen filter pack :
- a) type: Morie #00, Morie #0
- b) length: 2', 42'

7- Bentonite seal :
- a) method of placement: free pour from surface
- b) type: chips
- c) length: 5'

8- Grout :
- a) type: Type I
- b) grout mix: cement/bent.
- c) method of placement: tremie
- d) depth (feet bgs): 0-30'

(9) Outer Casing:
- 48' SP
- grouted in place
- steel drill casing (4-in dia)
- Type I grout (cement/bent).

APPENDIX B Soil Sampling Logs

OVERBURDEN BORING REPORT

PARSONS	CLIENT: SEAD	BORING NO.: SBFH-01
COMMENTS: COLLECTED SAMPLE FHESI10001 FROM 30"-36" BGS SAMPLE TIME: 12:35		DRILLER: JIM GOLDTHWAIT INSPECTOR: DAN CHAMBERLAND DATE: 8/11/2020

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0.2								LIGHT BROWN, FINE SAND, LITTLE SILT LOOSE, DRY, POORLY GRADED	SP	
								LIGHT BROWN, FINE SAND AND SILT, SOME FINE-COARSE GRAVEL, TRACE COBBLE, MEDIUM LOOSE, DRY, WELL GRADED	SW	
3.0								EOB		

Duplicate sample FH ESI 1004 collected at 1245 - Hand auger

OVERBURDEN BORING REPORT

PARSONS	CLIENT: SEAD	BORING NO.: SBFH-02
COMMENTS: COLLECTED SAMPLE FHESI0002 FROM 30"-36" BGS SAMPLE TIME: 15:00		DRILLER: JIM GOLDTHWAIT INSPECTOR: DAN CHAMBERLAND DATE: 8/11/2020

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0.2								LIGHT BROWN, SILT, SOME ORGANICS, MEDIUM STIFF, VERY DRY	ML	
								BROWN, FINE SAND, SOME MEDIUM TO COARSE GRAVEL, ANGULAR AND ROUNDED, SEVERAL PIECES OF BRICK, little SILT, MEDIUM DENSE, DRY	GM	
2.2								BROWN SILT, LITTLE CLAY, TRACE MEDIUM GRAVEL, ROUNDED, STIFF DRY	ML	
3.0								EOB		

SAMPLE FHESI0005 COLLECTED FROM 0.2-2.0' BGS in the fill material
- Hand augered

OVERBURDEN BORING REPORT

PARSONS	CLIENT: SEAD	BORING NO.: SBH-03
COMMENTS: COLLECTED SAMPLE FHESI10003 FROM 30"-36" BGS FHESI 10003/MSD SAMPLE TIME: 13:20 - Ifeanyi & Angela		DRILLER: JIM GOLDTHWAITE INSPECTOR: DAN CHAMBERLAND DATE: 8/11/2020

DEPTH (ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0.2								LIGHT BROWN, SILT AND ORGANICS TRACE SILT, POORLY GRADED, MEDIUM LOOSE, DRY	ML	
								GRAYISH BROWN, SILT, SOME LEAN CLAY SOME FINE TO COARSE GRAVEL, ANGULAR MEDIUM STIFF, DRY	GC	
3.0								EOB		

OVERBURDEN BORING REPORT

PARSONS	CLIENT: SEAD	BORING NO.: SB25-17

COMMENTS: COLLECT SAMPLE 25ESZ10001 FROM 30"-36" BGS @ 10.45 - Hand auger.

DRILLER: JIM GOLDTHWAIT
INSPECTOR: DAN CHAMBERLAND
DATE: 8/12/2020

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0.1								Brown, SILT, SOME ORGANICS, MEDIUM STIFF, DAMP, POORLY GRADED	ML	
								BROWN TO YELLOWISH BROWN, SILT, LITTLE CLAY, LITTLE FINE TO COARSE GRAVEL, ANGULAR TO ROUNDED, TRACE GLASS DEBRIS, MEDIUM STIFF, DAMP	GM	
30								E.O.B.		

OVERBURDEN BORING REPORT

PARSONS	CLIENT: SEAD	BORING NO.: SB25-18
COMMENTS: COLLECT 25ESI10002 from 30"-36" BGS @ COLLECT 25ESI10005 FROM 0.2-2.0 BGS @ composite 25ESI10006 Dup	DRILLER: JIM GOLDTHWAIT INSPECTOR: DAN CHAMBERLAND DATE: 8/12/2020	

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
								LIGHT GRAYISH BROWN, SILT AND FINE TO COARSE GRAVEL-ANGULAR TRACE COBBLE, MEDIUM LOOSE, DRY	GM	
1.0								BROWN CLAY, LITTLE SILT, LITTLE FINE GRAVEL-ROUNDED, MEDIUM STIFF, DAMP	CL	
2.0								BROWN, SILT, LITTLE FINE-COARSE GRAVEL ROUNDED-ANGULAR, MEDIUM STIFF DAMP	GM	
3.0								EOD		

- Hand auger

OVERBURDEN BORING REPORT

PARSONS | CLIENT: SEAD | BORING NO.: SB25-19

COMMENTS: COLLECT 25ESI10003 FROM 30"-36" BGS @ 11:30
COLLECT FB @ THIS LOCATION - 26ESI0100

DRILLER: JIM GOLDTHWAIT
INSPECTOR: DAN CHAMBERLAND
DATE: 8/12/2020

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0.2								LIGHT BROWN SILT AND FINE SAND, SOME ORGANICS, MEDIUM SOFT, DRY	ML	
								YELLOWISH BROWN, FINE-MEDIUM SAND, LITTLE FINE GRAVEL-ROUNDED TO ANGULAR, MEDIUM DENSE, DRY	SW	
1.9								DARK BROWN, CLAY AND SILT, LITTLE FINE-COARSE GRAVEL ANGULAR TO ROUNDED TRACE COBBLES, ANGULAR, MEDIUM STIFF, DAMP.	ML	
3.0								EOB		

- Collect Composite at 11:45 FROM 0.2-1.9' BGS (25ESI10004)
- Hand augered

OVERBURDEN BORING REPORT

PARSONS | CLIENT: SEAD | BORING NO.: SB26-13

COMMENTS: COLLECTED 26ESI10001 from 30"-36" BGS @ 13:30
- Hand augered

DRILLER: JIM GOLDTHWAIT
INSPECTOR: DAN CHAMBERLAND
DATE: 8/13/2020

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0								LIGHT TO MEDIUM BROWN, SILT, SOME FINE-COARSE GRAVEL, ANGULAR TO ROUNDED, TRACE MEDIUM COBBLE. dense, DRY. BRICK AND SLAG/COAL FILL DEBRIS. GRADING TO BROWN SILT, LITTLE FINE TO COARSE GRAVEL, ROUNDED TO ANGULAR, DENSE, DAMP	GM	
3.0								END OF BORING		

OVERBURDEN BORING REPORT

PARSONS	CLIENT: SEAD	BORING NO.: SB26-14
COMMENTS: COLLECT 26ESE 10002 from 30"-36" BGS @ 09:45 COLLECT 26ESE 10007 FROM 0-2' BGS @ 09:50 -Hand Augered		DRILLER: JIM GOLDTHWAIT INSPECTOR: DAN CHAMBERLAND DATE: 8/13/2020

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0'								GRAYISH BROWN, FINE-COARSE GRAVEL AND COBBLE ANGULAR TO ROUNDED, LITTLE COARSE SAND, LITTLE SILT DENSE, DRY. TRACE ROOTS FROM 0.0-0.2	GM	
2.4								YELLOWISH BROWN SILT, LITTLE CLAY TRACE COARSE GRAVEL, ROUNDED, STIFF DAMP	ML	
3.0								EOB		

OVERBURDEN BORING REPORT

PARSONS	CLIENT: SEAD	BORING NO.: SD26-15
COMMENTS: COLLECT 2 6 ESI 10003 FROM 30"-36" BGS -Hand augered		DRILLER: JIM GOLDTHWAIT INSPECTOR: DAN CHAMBERLAND DATE: 8/13/2021

DEPTH (Ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0'								LIGHT TO DARK BROWN SILT WITH FINE-COARSE GRAVEL GRADING TO DARK BROWN SILT, TRACE CLAY, TRACE FINE GRAVEL. LOOSE TO MEDIUM STIFF, DRY TO DAMP.	GM ML	
3.0								END OF BORING		

OVERBURDEN BORING REPORT

PARSONS	CLIENT: SEAD	BORING NO.: SB26-16
COMMENTS: COLLECT SAMPLE 26ESE10004 from 30"-36" BGS @ 08:30 COLLECT SAMPLE 26ESE10006 FROM 0.0-2.2' BGS @ 08:40	DRILLER: Jim Goldthwait INSPECTOR: Dan Chamberlain DATE: 8/13/2020	

DEPTH (Ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
								BRIWN AND GRAY FINE-COARSE GRAVEL AND COBBLE, ROUNDED TO ANGULAR, LITTLE SILT AND FINE SAND, DENSE, DRY	ROCK GR-ANL	
2.2								YELLOWISH BROWN, SILT, LITTLE FINE GRAVEL, ROUNDED TO ANGULAR STIFF, DRY	GM	
3.0								END OF BORING		

- Hand auger

OVERBURDEN BORING REPORT

PARSONS | CLIENT: SEAD | BORING NO.: SB26-17

COMMENTS: COLLECT FROM 30"-36" BGS @ 14:50
26ESI 10005

DRILLER: JIM GOLDTHWAIT
INSPECTOR: DAN CHAMBERLAND
DATE: 8/12/2020

DEPTH (FT)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0								DARK GRAY FRACTURED ROCK, COARSE GRAVEL TO BOULDER SIZED, ANGULAR DENSE. SOIL BETWEEN THE ROCKS IS DRY TO MOIST	ROCK w/ SM	
3.0								EOB		

APPENDIX C Surface Water Sampling Logs

Surface Water Sampling Forms
August 2020

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA ARMY DEPOT, ROMULUS, NY
PROJECT NUMBER: 749679.0809
SAMPLING DATE / TIME: 08/25/2020 / 0840
WEATHER: SUNNY
SAMPLERS: JHG, MRM of PARSONS
of PARSONS

SAMPLE ID: FHES130001
SAMPLING METHOD: PARASALTIC PUMP
DEPTH OF SAMPLE: 1.5 foot @ grate

DESCRIPTION OF SAMPLING POINT

LOCATION: NEAR RESIDENTIAL APPARTMENTS OFF RTE 96
PHYSICAL APPEARANCE: STORM DRAIN GRATE
DEPTH TO BOTTOM: ~2 feet
DRAINAGE DIRECTION: NA
UPSTREAM FROM: –
DOWNSTREAM FROM: ~~FHES130W0~~ + SWFH-2

SAMPLE DESCRIPTION

COLOR: YELLOW
ODOR: STAGNENT
SUSPENDED MATTER: ALGEE LIKE WITH DERIS
OTHER:

FIELD TESTS

TEMPERATURE: –
pH: –
CONDUCTIVITY: –
REDOX: –
DISSOLVED CO2: –
OTHER: –

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFAS
QA/QC SAMPLE ID: –
ANALYZE QA/QC SAMPLES FOR: –
DATE/TIME REFRIGERATED: 08/25/2020 / 0840
CHAIN OF CUSTODY NUMBER:
SHIPPED VIA: FED-EX
LABORATORY: EUROFINS

COMMENTS / MISCELLANEOUS STORM EVENT EARLY AM PRIOR TO SAMPLING STORM DRAIN
See site fig for location

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA army DEPOT, ROMULUS, N.Y
PROJECT NUMBER: 749679.0000
SAMPLING DATE / TIME: 08/25/2020 / 0900
WEATHER: SUNNY
SAMPLERS: JHG, MRM of PARSONS
of PARSONS

SAMPLE ID: FHES130002
SAMPLING METHOD: PARASTALTIC PUMP
DEPTH OF SAMPLE: 0.2 ft @ grate

DESCRIPTION OF SAMPLING POINT

LOCATION: SOUTH OF FIELD OFFICE
PHYSICAL APPEARANCE: STORM GRATE
DEPTH TO BOTTOM: 0.2 feet
DRAINAGE DIRECTION: NA
UPSTREAM FROM: SWFH-03
DOWNSTREAM FROM: SWFH-01

SAMPLE DESCRIPTION

COLOR: YELLOW
ODOR: NO ODOR
SUSPENDED MATTER: YES, NUMEROUS PARTICLES
OTHER: -

FIELD TESTS

TEMPERATURE: -
pH: -
CONDUCTIVITY: -
REDOX: -
DISSOLVED O2: -
OTHER: -

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFAS
QA/QC SAMPLE ID: -
ANALYZE QA/QC SAMPLES FOR: -
DATE/TIME REFRIGERATED: 08/25/2020 / 0900
CHAIN OF CUSTODY NUMBER:
SHIPPED VIA: FED-EX
LABORATORY: EUROFINS

COMMENTS / MISCELLANEOUS STORM EVENT EARLY AM PRIOR TO SAMPLING STORM DRAIN
see site figure for location

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SEAD 25SW-01
PROJECT NUMBER: 749674.0800
SAMPLING DATE / TIME: 8/21/2020
WEATHER: 82, CLEAR, CALM
SAMPLERS: ED ASTITON of PARSONS
DAN CHAMBERLAND of PARSONS

SAMPLE ID: 25ESI30004
SAMPLING METHOD: SAMPLE BOTTLE GRAB
DEPTH OF SAMPLE: 0.2

DESCRIPTION OF SAMPLING POINT

LOCATION: 25SW-01
PHYSICAL APPEARANCE: BRUSHY
DEPTH TO BOTTOM: 0.3
DRAINAGE DIRECTION:
UPSTREAM FROM:
DOWNSTREAM FROM:

SAMPLE DESCRIPTION

COLOR: CLEAR
ODOR: NO
SUSPENDED MATTER: NO
OTHER:

FIELD TESTS

TEMPERATURE: 19.24
pH: 7.56
CONDUCTIVITY: 0.721
REDOX: 215
DISSOLVED O2: 8.32
OTHER: 0.0 TURB

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOA
QA/QC SAMPLE ID:
ANALYZE QA/QC SAMPLES FOR: PFOA
DATE/TIME REFRIGERATED: 8/21/2020 12:00
CHAIN OF CUSTODY NUMBER:
SHIPPED VIA: FED EX
LABORATORY: TEST AMERICA

COMMENTS / MISCELLANEOUS MW25-20 WATER LEVEL: 7.75
See site figure for location

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SEAD AREA 25 25SW-02
PROJECT NUMBER: 749674.0800
SAMPLING DATE / TIME: 8/21/2020
WEATHER: 82, CLEAR, CALM
SAMPLERS: ED ASHTON of PARSONS
DAN CHAMBERLAND of PARSONS

SAMPLE ID: 25SW30005
SAMPLING METHOD: SAMPLE BOTTLE GRAB
DEPTH OF SAMPLE: 0.2

DESCRIPTION OF SAMPLING POINT

LOCATION: 25SW-02
PHYSICAL APPEARANCE: CLEAR, LOTS OF VEGETATION
DEPTH TO BOTTOM: 1.6
DRAINAGE DIRECTION:
UPSTREAM FROM:
DOWNSTREAM FROM:

SAMPLE DESCRIPTION

COLOR: CLEAR
ODOR: NO
SUSPENDED MATTER: VEGETATION
OTHER:

FIELD TESTS

TEMPERATURE: 25.69
pH: 8.38
CONDUCTIVITY: 0.590
REDOX: 54
DISSOLVED O2: 8.92
OTHER: TURB: 0.0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOA
QA/QC SAMPLE ID:
ANALYZE QA/QC SAMPLES FOR:
DATE/TIME REFRIGERATED: 8/21/2020 12:50
CHAIN OF CUSTODY NUMBER:
SHIPPED VIA: FED EX
LABORATORY: TEST AMERICA

COMMENTS / MISCELLANEOUS WELL MW25-21 WATER LEVEL: 1.50
STAFF GAUGE: 1.42
See site figure for location

25SW-04

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SEAD 25
PROJECT NUMBER: Seneca Army Depot 749679.08000
SAMPLING DATE / TIME: 8/24/2020 1530
WEATHER: Sunny 80°
SAMPLERS: Matt Muhr of
of
SAMPLE ID: 25ESI30007 Field Dup: 25ESI01007
SAMPLING METHOD: Bottle
DEPTH OF SAMPLE: 0.5'

DESCRIPTION OF SAMPLING POINT
LOCATION: South of traintracks
PHYSICAL APPEARANCE: murky
DEPTH TO BOTTOM: ~4'
DRAINAGE DIRECTION: Stagnant
UPSTREAM FROM:
DOWNSTREAM FROM: SW25-05

SAMPLE DESCRIPTION
COLOR: Light brown
ODOR: None
SUSPENDED MATTER: Some
OTHER: N/A

FIELD TESTS
TEMPERATURE: 28.46° C
pH: 8.45
CONDUCTIVITY: 0.613 mS/cm
REDOX: 116
DISSOLVED O2: 9.66 mg/L
OTHER: -

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY
ANALYZE FOR: PFAs
QA/QC SAMPLE ID: N/A
ANALYZE QA/QC SAMPLES FOR:
DATE/TIME REFRIGERATED: 8/24/2020
CHAIN OF CUSTODY NUMBER:
SHIPPED VIA: Fedex
LABORATORY: Eurofins

COMMENTS / MISCELLANEOUS Nearest GW well = 1.51 MW25-21
Staff gauge measurement: ~~4.18~~ 4.12
See site figure for location

25SW-05

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: Seneca Army Depot
PROJECT NUMBER: 749674.0800
SAMPLING DATE / TIME: 08/25/2020 / 1410
WEATHER: Sunny 80°
SAMPLERS: JHG, MRM of PARSONS
of PARSONS

SAMPLE ID: 25ESI30008
SAMPLING METHOD: Dip bottle in water
DEPTH OF SAMPLE: 0.5'

DESCRIPTION OF SAMPLING POINT

LOCATION: Near MW25-28
PHYSICAL APPEARANCE: Cloudy
DEPTH TO BOTTOM: ~2.5'
DRAINAGE DIRECTION: Stagnant
UPSTREAM FROM: 25SW-04
DOWNSTREAM FROM: 25SW-06

SAMPLE DESCRIPTION

COLOR: Brown
ODOR: None
SUSPENDED MATTER: Some
OTHER: —

FIELD TESTS

TEMPERATURE: 26.77 C
pH: 7.38
CONDUCTIVITY: 0.596 mS/cm
REDOX: 89
DISSOLVED O2: 12.22
OTHER: NTU 0.0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFAS
QA/QC SAMPLE ID: —
ANALYZE QA/QC SAMPLES FOR: —
DATE/TIME REFRIGERATED: 8/25/2020
CHAIN OF CUSTODY NUMBER: —
SHIPPED VIA: Fedex
LABORATORY: Eurofins

COMMENTS / MISCELLANEOUS MW25-28 DTW = 0.80
Staff Gauge measurement = 1.0'
See site figure for location

25SW-06

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: Seneca Army Depot SEAD 25
PROJECT NUMBER: 449674.08000
SAMPLING DATE / TIME: 8/25/2020 1215, 1220, 1230
WEATHER: Sunny 80°
SAMPLERS: JHG + MAM of Parsons
of

SAMPLE ID: 25ESI30009, 25ESI30009MS/MSD, 25ESI30010
SAMPLING METHOD: Dip bottles into water
DEPTH OF SAMPLE:

DESCRIPTION OF SAMPLING POINT

LOCATION: Other side of fence/line at Sead 25
PHYSICAL APPEARANCE: Clear with weeds on bottom
DEPTH TO BOTTOM: 1.2'
DRAINAGE DIRECTION: west
UPSTREAM FROM: 25SW06S
DOWNSTREAM FROM:

SAMPLE DESCRIPTION

COLOR: Brown
ODOR: None
SUSPENDED MATTER: Some
OTHER: —

FIELD TESTS

TEMPERATURE: 25.83C
pH: 5.52
CONDUCTIVITY: 0.620 MS/CM
REDOX: 172
DISSOLVED O2: 7.70 mg/L
OTHER: 0.0 NTU

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFAs
QA/QC SAMPLE ID: 25ESI30009MS, 25ESI30009MSD, 25ESI30010
ANALYZE QA/QC SAMPLES FOR: PFAs
DATE/TIME REFRIGERATED: 8/25/2020 at 1230
CHAIN OF CUSTODY NUMBER: —
SHIPPED VIA: Fedex
LABORATORY: Eurofins

COMMENTS / MISCELLANEOUS

MW25-32: 10.55' Staff gauge measurement: 1.3'
See site figure for location

HORIBA CALIBRATION
4.0 pH
4.48 MS/CM
0.0 NTU
10.8 mg/L DO

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SEAD AREA 26
PROJECT NUMBER: 749674.0800
SAMPLING DATE / TIME: 8/12/2020 13:30
WEATHER: 84 CLEAR, BREEZY
SAMPLERS: ED ASHTON of PARSONS
DAN CHAMBERLAND of PARSONS

SAMPLE ID: 26ESI70003
SAMPLING METHOD: SAMPLE BOTTLE GRAB
DEPTH OF SAMPLE: 0.1

DESCRIPTION OF SAMPLING POINT
LOCATION: SW 26-03
PHYSICAL APPEARANCE: CLEAR, MINIMAL VEGETATION, STAGNANT, VERY LOW DISCHARGE
DEPTH TO BOTTOM: 1.5' IN THE CENTER OF POOL
DRAINAGE DIRECTION: WEST
UPSTREAM FROM: -
DOWNSTREAM FROM: -

SAMPLE DESCRIPTION
COLOR: NONE
ODOR: NONE
SUSPENDED MATTER: ORGANICS
OTHER:

FIELD TESTS
TEMPERATURE: 18.05
pH: 7.80
CONDUCTIVITY: 0.473
REDOX: 92
DISSOLVED CO2: 10.32
OTHER: TURB: 0.0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY
ANALYZE FOR: PFOA
QA/QC SAMPLE ID:
ANALYZE QA/QC SAMPLES FOR:
DATE/TIME REFRIGERATED: 8/12/2020 13:40
CHAIN OF CUSTODY NUMBER:
SHIPPED VIA:
LABORATORY:

COMMENTS / MISCELLANEOUS WELL WATER LEVELS
MW 26-18: 9.5
MW 26-15: 8.15
see site fig for location

SW26-04

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: Seneca Army Depot SEAD 26
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 8/25/2020 at 1530 and 1535
WEATHER: Sunny 80
SAMPLERS: JHG + MRM of Parsons
of
SAMPLE ID: 26ESI30004 @ 1530 + 26ESI30005 @ 1535
SAMPLING METHOD: Dip bottle in water
DEPTH OF SAMPLE: 0.1'

DESCRIPTION OF SAMPLING POINT

LOCATION: SEAD 26
PHYSICAL APPEARANCE: Cloudy/muddy
DEPTH TO BOTTOM: 0.2'
DRAINAGE DIRECTION: Stagnant
UPSTREAM FROM:
DOWNSTREAM FROM:

SAMPLE DESCRIPTION

COLOR: Brown
ODOR: Sulfur.
SUSPENDED MATTER: Some
OTHER: —

FIELD TESTS

TEMPERATURE: 31.17C
pH: 8.07
CONDUCTIVITY: MS/CM 0.312
REDOX: -211
DISSOLVED O2: 12.01
OTHER: 214 NTU

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFAs
QA/QC SAMPLE ID: 26ESI30005
ANALYZE QA/QC SAMPLES FOR: PFAs
DATE/TIME REFRIGERATED: 8/25/2020
CHAIN OF CUSTODY NUMBER: —
SHIPPED VIA: Fedex
LABORATORY: Eurofins

COMMENTS / MISCELLANEOUS Staff gauge measurement = 1.0'
See site figure for site location

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: Seneca Army Depot
PROJECT NUMBER: 749674 cf
SAMPLING DATE / TIME: 8-28-20 @ 1240
WEATHER: Sunny - 80's
SAMPLERS: EOH of Parsons
JG of Parsons

SAMPLE ID: 26ESD 3006
SAMPLING METHOD: Dip container into water
DEPTH OF SAMPLE: ~ 6"

DESCRIPTION OF SAMPLING POINT

LOCATION: SW26-05
PHYSICAL APPEARANCE: Clear
DEPTH TO BOTTOM: ~6"
DRAINAGE DIRECTION: West
UPSTREAM FROM: Fayette Road
DOWNSTREAM FROM: SEAD 26 Pond

SAMPLE DESCRIPTION

COLOR: Clear
ODOR: none
SUSPENDED MATTER: none
OTHER: —

FIELD TESTS

TEMPERATURE: 21.50 °C
pH: 8.25
CONDUCTIVITY: 0.377 mS/cm
REDOX: 41.0 mV
DISSOLVED O2: 9.15 mg/L
OTHER: NTU = 0.0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOA, Mod 537 plus 21 compounds
QA/QC SAMPLE ID: NA
ANALYZE QA/QC SAMPLES FOR: NA
DATE/TIME REFRIGERATED: 8-28-20 @ ~~1430~~ 1210
CHAIN OF CUSTODY NUMBER: —
SHIPPED VIA: Fedex
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS X = 749,045.73 } coordinates
Y = 992,406.87
Sample collected west of SEAD 26 Pond
See Site figure for location

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA ARMY DEPOT
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 08/28/20 1052
WEATHER: MOSTLY CLOUDY
SAMPLERS: J.H.G, E.J.A. of Parsons
of

SAMPLE ID: 26ES130007
SAMPLING METHOD: DIPPED CONTAINER IN WATER
DEPTH OF SAMPLE: 4"

DESCRIPTION OF SAMPLING POINT

LOCATION: SW26-06
PHYSICAL APPEARANCE: CLEAR
DEPTH TO BOTTOM: 4"
DRAINAGE DIRECTION: going West
UPSTREAM FROM: ~~SE~~ FAYETTE ROAD
DOWNSTREAM FROM: ~~P~~ C26-(POND)

SAMPLE DESCRIPTION

COLOR: CLEAR
ODOR: NONE
SUSPENDED MATTER: NONE
OTHER:

FIELD TESTS

TEMPERATURE: 19.71
pH: 8.06
CONDUCTIVITY: ~~80~~ .423
REDOX: 11.0
DISSOLVED O2: 8.93
OTHER: NTU 0.0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOA's MOD 537 + 21 COMPOUNDS
QA/QC SAMPLE ID: FB;26ES101012 (1050 time)
ANALYZE QA/QC SAMPLES FOR: SAME AS ABOVE
DATE/TIME REFRIGERATED: 8/28/2020 @ 1100
CHAIN OF CUSTODY NUMBER:
SHIPPED VIA: FED-EX
LABORATORY: TEST AMERICA, SACRAMENTO, CA,

COMMENTS / MISCELLANEOUS

See side figure for location

MW26-25
Depth of water 8.85'

Surface Water Sampling Forms
March 2021

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA ARMY DEPOT
PROJECT NUMBER: 749674
SAMPLING DATE / TIME: 3/31/21 1350
WEATHER: Cloudy, 45°F
SAMPLERS: Kaity Moranz of Parsons
Mike Hayes of Parsons

SAMPLE ID: FHESI30004
SAMPLING METHOD: Peri pump + HDPE tubing
DEPTH OF SAMPLE: ~~12~~ ' bgs.

DESCRIPTION OF SAMPLING POINT

LOCATION: SWFH-01
PHYSICAL APPEARANCE: Yellow/Brown, debris/organic matter
DEPTH TO BOTTOM: Unknown
DRAINAGE DIRECTION: N out
UPSTREAM FROM: ~~FWF~~ SWFH-02
DOWNSTREAM FROM: NA

SAMPLE DESCRIPTION

COLOR: Brown/yellow
ODOR: None
SUSPENDED MATTER: Floating dirt/organic matter
OTHER: —

FIELD TESTS

TEMPERATURE: 10.18°C
pH: 8.51
CONDUCTIVITY: 1.43 mS/cm
REDOX: 7 mV
DISSOLVED O2: 16.57 mg/L
OTHER: turb = 138 NTU

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFAS
QA/QC SAMPLE ID: ~~SEDA~~ SEDAPFAS00015 (EB) @ 1400
ANALYZE QA/QC SAMPLES FOR: PFAS
DATE/TIME REFRIGERATED: 3/31/21
CHAIN OF CUSTODY NUMBER: NA
SHIPPED VIA: FedEx
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS Recharge was noted from ground, not sides
Equip. calibrated.

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: Seneca Army Depot / PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3-24-2021 / 1125
WEATHER: Rain/Cloudy 49°
SAMPLERS: Ed Ashton of Parsons
Lindsay Toot of Parsons

SAMPLE ID: FHESI30005
SAMPLING METHOD: peripump; HDPE & Silicone tubing
DEPTH OF SAMPLE: 1 inch

DESCRIPTION OF SAMPLING POINT

LOCATION: SWFH-02
PHYSICAL APPEARANCE: murky
DEPTH TO BOTTOM: 2 inch
DRAINAGE DIRECTION: west
UPSTREAM FROM: SWFH-03
DOWNSTREAM FROM: SWFH-01

SAMPLE DESCRIPTION

COLOR: Clear water w/ black suspended organic matter
ODOR: none
SUSPENDED MATTER: yes/organic matter built up in drainage basin
OTHER: no sheen / High turbidity

FIELD TESTS

TEMPERATURE: 9.56° C
pH: 6.58
CONDUCTIVITY: 0.154 mS/cm
REDOX: 116 mV
DISSOLVED O2: 6.24 mg/L
OTHER: Turb = +1000

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAs
QA/QC SAMPLE ID: n/a
ANALYZE QA/QC SAMPLES FOR: n/a
DATE/TIME REFRIGERATED: 3/24/2021 1130
CHAIN OF CUSTODY NUMBER: 415 325
SHIPPED VIA: FedEx
LABORATORY: TestAmerica Sacramento

COMMENTS / MISCELLANEOUS Equip. Cal.

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: Seneca Army Depot / PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3-24-2021 1200
WEATHER: Rain/Cloudy 49°
SAMPLERS: Ed Ashton of Parsons
Lindsay Toot of Parsons

SAMPLE ID: FHES1300016
SAMPLING METHOD: peristaltic pump collected sample from different drain from 2020 due to Rd diversion
DEPTH OF SAMPLE: 0.5 inch

DESCRIPTION OF SAMPLING POINT

LOCATION: SWFH-03, collection drain southwest from office building collected from intersection of South St & 4th Ave
PHYSICAL APPEARANCE: murky brown
DEPTH TO BOTTOM: 1 inch
DRAINAGE DIRECTION: ~~southwest~~ northeast
UPSTREAM FROM: ~~SWFH-02~~
DOWNSTREAM FROM: n/a

SAMPLE DESCRIPTION

COLOR: murky brown
ODOR: no odor
SUSPENDED MATTER: organic matter
OTHER: no sheen

FIELD TESTS

TEMPERATURE: 11.95°C
pH: 6.97
CONDUCTIVITY: 0.496 mS/cm
REDOX: 109 mV
DISSOLVED O2: 5.50 mg/L
OTHER: Turb = +1000

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAs
QA/QC SAMPLE ID: n/a
ANALYZE QA/QC SAMPLES FOR: n/a
DATE/TIME REFRIGERATED: 3/24/21 1205
CHAIN OF CUSTODY NUMBER: 415325
SHIPPED VIA: Fed Ex
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS Water from original 2020 sample location flows into sampled drain
Equip. cal.

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SEAD 25 SENECA ARMY DEPOT | PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3/30/21 0820
WEATHER: clear 40°F
SAMPLERS: Ed Ashton of Parsons
Katy Moranz of Parsons

SAMPLE ID: 25 ESI 30006
SAMPLING METHOD: Grab
DEPTH OF SAMPLE: 6 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: Surface Water 25-01
PHYSICAL APPEARANCE: clear with organic matter
DEPTH TO BOTTOM: 12 inches
DRAINAGE DIRECTION: W
UPSTREAM FROM: ~~SW 25-02~~ 25 SW 02
DOWNSTREAM FROM: ~~SW 25-03~~ 25 SW 03

SAMPLE DESCRIPTION

COLOR: clear
ODOR: None
SUSPENDED MATTER: Organic matter
OTHER: No sheen

FIELD TESTS

TEMPERATURE: 6.57 °C
pH: 5.28
CONDUCTIVITY: 1.05 ms/cm
REDOX: 428 mV
DISSOLVED O2: 17.52
OTHER: turb = 11.7 NTU

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAs
QA/QC SAMPLE ID: N/A
ANALYZE QA/QC SAMPLES FOR: N/A
DATE/TIME REFRIGERATED: 3/30/21
CHAIN OF CUSTODY NUMBER: NA
SHIPPED VIA: FedEx
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS Collected 50 ft upstream from original, adjacent to drain inlet (due to safety concerns of high water and increased slope)
Water level in swale higher than normal
-Equipment

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA ARMY DEPOT / PFOA investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3/30/21 0850
WEATHER:
SAMPLERS: Ed Ashton of Parsons
Kaity Moranz of Parsons

SAMPLE ID: 25ESI30011
SAMPLING METHOD: Grab
DEPTH OF SAMPLE: 6 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: 25 SW-02
PHYSICAL APPEARANCE: clear with floating aquatic vegetation
DEPTH TO BOTTOM: 2 ft (according to staff gauge)
DRAINAGE DIRECTION: ~~W~~ N
UPSTREAM FROM: 25 SW-04
DOWNSTREAM FROM: 25 SW-01

SAMPLE DESCRIPTION

COLOR: Slight yellow tint
ODOR: None
SUSPENDED MATTER: organic matter
OTHER: No sheen

FIELD TESTS

TEMPERATURE: 4.81° C
pH: 6.44
CONDUCTIVITY: 0.9666 mS/cm
REDOX: 248 mV
DISSOLVED O2: 14.92 mg/L
OTHER: turb = 10.8 NTU

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAs
QA/QC SAMPLE ID: 25ESI30011 MS / 25ESI30011 MSD / 25ESI30016 / SFDAPFAS01009
ANALYZE QA/QC SAMPLES FOR: PFOAs
DATE/TIME REFRIGERATED: 3/30/31
CHAIN OF CUSTODY NUMBER: MA
SHIPPED VIA: Fed Ex
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS: Water level in swale higher than normal
Equip Cal.

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: Seneca Army Depot / PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3/24/2021 / 1021
WEATHER: Rain / cloudy 49°
SAMPLERS: Ed Ashton of Parsons
Lindsay Toot of Parsons

SAMPLE ID: 25ESI30012
SAMPLING METHOD: grab / submersed sample container @ 1ein and let flow for 1min
DEPTH OF SAMPLE: 6 inch

DESCRIPTION OF SAMPLING POINT

LOCATION: West of apartment building in swale 25SW-03
PHYSICAL APPEARANCE: Clear
DEPTH TO BOTTOM: water column ~12in sampled @ 6in interval
DRAINAGE DIRECTION: west
UPSTREAM FROM: upstream of SW25-04
DOWNSTREAM FROM: apartments

SAMPLE DESCRIPTION

COLOR: clear
ODOR: none
SUSPENDED MATTER: none
OTHER: no sheen

FIELD TESTS

TEMPERATURE: 11.43 °C
pH: 6.25
CONDUCTIVITY: 0.747 mS/cm
REDOX: 164 mV
DISSOLVED O2: 5.65 mg/L
OTHER: Turb = 2.53 NTU

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAs
QA/QC SAMPLE ID: n/a
ANALYZE QA/QC SAMPLES FOR: n/a
DATE/TIME REFRIGERATED: 3/24/2021 1130
CHAIN OF CUSTODY NUMBER: 415325
SHIPPED VIA: FedEx
LABORATORY: Test America Sacremento

COMMENTS / MISCELLANEOUS Swale is normally dry in summer
Equip. cal

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA ARMY DEPOT / PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3/30/31 0930
WEATHER: Clear 40°F
SAMPLERS: Ed Ashton of Parsons
Kaity Morantz of Parsons

SAMPLE ID: 25FSI30013
SAMPLING METHOD: Grab
DEPTH OF SAMPLE: 6 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: SW25-04
PHYSICAL APPEARANCE: Clear with algae/organic matter
DEPTH TO BOTTOM: 4.5 ft
DRAINAGE DIRECTION: W
UPSTREAM FROM: SW25-05
DOWNSTREAM FROM: SW25-02

SAMPLE DESCRIPTION

COLOR: Slight yellow tint
ODOR: None
SUSPENDED MATTER: Organic matter
OTHER: No sheen

FIELD TESTS

TEMPERATURE: 6.73° C
pH: 6.95
CONDUCTIVITY: 0.854 ms/cm
REDOX: 21 mV
DISSOLVED O2: 27.59 mg/L
OTHER: turb = 4.28 NTU

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAs
QA/QC SAMPLE ID: N/A
ANALYZE QA/QC SAMPLES FOR: N/A
DATE/TIME REFRIGERATED: 3-30-31
CHAIN OF CUSTODY NUMBER: NA
SHIPPED VIA: FedEx
LABORATORY: Test America Sacremento

COMMENTS / MISCELLANEOUS Water level higher than normal
Equip Cal.

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA ARMY DEPOT / PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3/30/21 0940
WEATHER: clear 40°
SAMPLERS: Ed Hylton of Parsons
Kaity Moranz of Parsons

SAMPLE ID: ~~SW25-05~~ 25ESI30014
SAMPLING METHOD: Grab
DEPTH OF SAMPLE: 6 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: SW25-05
PHYSICAL APPEARANCE: clear with organic matter
DEPTH TO BOTTOM: 2 ft
DRAINAGE DIRECTION: N
UPSTREAM FROM: SW25-06
DOWNSTREAM FROM: SW25-04

SAMPLE DESCRIPTION

COLOR: clear
ODOR: None
SUSPENDED MATTER: organic matter
OTHER: No sheen

FIELD TESTS

TEMPERATURE: 6.93°C
pH: 7.28
CONDUCTIVITY: 0.844 ms/cm
REDOX: 22 mV
DISSOLVED O2: 18.79 mg/L
OTHER: turb = 5.64 NTU

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAs
QA/QC SAMPLE ID: N/A
ANALYZE QA/QC SAMPLES FOR: N/A
DATE/TIME REFRIGERATED: 3/30/21
CHAIN OF CUSTODY NUMBER: NA
SHIPPED VIA: FedEx
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS Equip cal.
water level higher than normal.

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA ARMY DEPOT
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3/30/21 0950
WEATHER: clear 45°F
SAMPLERS: Ed Ashton of Parsons
Kaity Moranz of Parsons

SAMPLE ID: 25ESI30015
SAMPLING METHOD: Grab
DEPTH OF SAMPLE: ~~8 ft~~ 8 in

DESCRIPTION OF SAMPLING POINT

LOCATION: SW25-06
PHYSICAL APPEARANCE: clear
DEPTH TO BOTTOM: 1.5 ft
DRAINAGE DIRECTION: E
UPSTREAM FROM: N/A
DOWNSTREAM FROM: SW25-05

SAMPLE DESCRIPTION

COLOR: clear
ODOR: None
SUSPENDED MATTER: ~~sl~~ small amount of organic matter
OTHER:

FIELD TESTS

TEMPERATURE: 5.95°C
pH: 7.42
CONDUCTIVITY: 0.830 mS/cm
REDOX: 14 mV
DISSOLVED O2: 12.28 mg/L
OTHER: turb = 4.79 NTU

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAS
QA/QC SAMPLE ID: N/A
ANALYZE QA/QC SAMPLES FOR: N/A
DATE/TIME REFRIGERATED: 3/30/21
CHAIN OF CUSTODY NUMBER: NA
SHIPPED VIA: Fed Ex
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS Water level higher than normal

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: Seneca Army Depot / PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3-24-2021 / 1310
WEATHER: Cloudy 54°
SAMPLERS: Ed Ashton of Parsons
Lindsay Toot of Parsons

SAMPLE ID: 26ESI30010
SAMPLING METHOD: grab sample
DEPTH OF SAMPLE: 2.5 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: SW26-01
PHYSICAL APPEARANCE: Clear / Algae at bottom
DEPTH TO BOTTOM: 3-3.5"
DRAINAGE DIRECTION: West
UPSTREAM FROM: No well or sampling location present
DOWNSTREAM FROM: MW 26-19

SAMPLE DESCRIPTION

COLOR: clear to lightly cloudy
ODOR: no odor
SUSPENDED MATTER: some organic matter
OTHER: no sheen

FIELD TESTS

TEMPERATURE: 11.54 °C
pH: 7.41
CONDUCTIVITY: 0.521 mS/cm
REDOX: 94 mV
DISSOLVED O2: 9.28 mg/L
~~OTHER~~: Turb = 6.95 NTU

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAS
QA/QC SAMPLE ID: n/a
ANALYZE QA/QC SAMPLES FOR: n/a
DATE/TIME REFRIGERATED: 3/24/2021
CHAIN OF CUSTODY NUMBER: 41 5325
SHIPPED VIA: FedEx
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS Equip Cal

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: Seneca Army Depot / PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3-24-2021 / 1250
WEATHER: Cloudy 54°
SAMPLERS: Ed Ashton of Parsons
Lindsay Toot of Parsons

SAMPLE ID: 26ESI30011
SAMPLING METHOD: grab
DEPTH OF SAMPLE: 2 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: SW26-02
PHYSICAL APPEARANCE: Clear, nosheen, minor organics
DEPTH TO BOTTOM: 2 inches
DRAINAGE DIRECTION: West
UPSTREAM FROM: [illegible] MW26-20
DOWNSTREAM FROM: SEAD 26 Fire training Area / MW26-14

SAMPLE DESCRIPTION

COLOR: Clear
ODOR: no odor
SUSPENDED MATTER: minor organics
OTHER: no sheen

FIELD TESTS

TEMPERATURE: 11.96°C
pH: 7.37
CONDUCTIVITY: 0.1642 mS/cm
REDOX: 122 mV
DISSOLVED O2: 8.58 mg/L
OTHER: Turb = 16.6 NTU

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAS
QA/QC SAMPLE ID: n/a
ANALYZE QA/QC SAMPLES FOR: n/a
DATE/TIME REFRIGERATED: 3/24/2021
CHAIN OF CUSTODY NUMBER: 415325
SHIPPED VIA: FedEx
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS Equip cal

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA ARMY DEPOT / PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3/30/24 1030
WEATHER: Clear 45°F
SAMPLERS: Ed Ashton of Parsons
Kaity Moranz of Parsons

SAMPLE ID: 26ESI30001
SAMPLING METHOD: Grab
DEPTH OF SAMPLE: 8 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: SW26-03
PHYSICAL APPEARANCE: clear, algae/organic matter
DEPTH TO BOTTOM: 1.5 ft
DRAINAGE DIRECTION: W
UPSTREAM FROM: SEAD 26 Fire training area
DOWNSTREAM FROM: SW26-04

SAMPLE DESCRIPTION

COLOR: clear
ODOR: None
SUSPENDED MATTER: Organic matter
OTHER: No sheen

FIELD TESTS

TEMPERATURE: 7.62
pH: 7.61
CONDUCTIVITY: 0.592 ms/cm
REDOX: -14 mV
DISSOLVED O2: 12.03 mg/L
OTHER: turb = 3.46

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAs
QA/QC SAMPLE ID: * 26ESI30012 (dup)
ANALYZE QA/QC SAMPLES FOR: PFOAS
DATE/TIME REFRIGERATED: 3/30/24
CHAIN OF CUSTODY NUMBER: NA
SHIPPED VIA: FedEx
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS Water level normal
Equip cal.

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA ARMY DEPOT / PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3/30/21 1110
WEATHER: Sunny 55°F
SAMPLERS: Ed Ashton of Parsons
Kaity Moranz of Parsons

SAMPLE ID: 26EST30002
SAMPLING METHOD: Grab
DEPTH OF SAMPLE: 0 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: SW26-04
PHYSICAL APPEARANCE: clear with organic matter
DEPTH TO BOTTOM: 2 ft
DRAINAGE DIRECTION: N
UPSTREAM FROM: SW26-03
DOWNSTREAM FROM: SW26-05

SAMPLE DESCRIPTION

COLOR: clear
ODOR: None
SUSPENDED MATTER: Small suspended matter
OTHER: No sheen

FIELD TESTS

TEMPERATURE: 10.61°C
pH: 7.81
CONDUCTIVITY: 0.445 mS/cm
REDOX: 36 mV
DISSOLVED O2: 9.03 mg/L
OTHER: turb = 23.2

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAS
QA/QC SAMPLE ID: N/A
ANALYZE QA/QC SAMPLES FOR: N/A
DATE/TIME REFRIGERATED: 3/30/21
CHAIN OF CUSTODY NUMBER: NA
SHIPPED VIA: FedEx
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS Water level higher than normal
Equip cal.

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA ARMY DEPOT / PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3/30/21 1245
WEATHER: Sunny 65°F
SAMPLERS: Ed Ashton of Parsons
Kaity Morantz of Parsons

SAMPLE ID: 26ESI30008
SAMPLING METHOD: Grab
DEPTH OF SAMPLE: 6 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: SW26-05
PHYSICAL APPEARANCE: Slightly cloudy with organic matter
DEPTH TO BOTTOM: 1 ft
DRAINAGE DIRECTION: W
UPSTREAM FROM: SW26-06
DOWNSTREAM FROM: SW26-04

SAMPLE DESCRIPTION

COLOR: ~~Clear~~ slightly cloudy, no color
ODOR: None
SUSPENDED MATTER: None
OTHER: No sheen

FIELD TESTS

TEMPERATURE: 12.13°C
pH: 7.89
CONDUCTIVITY: 0.487
REDOX: 71
DISSOLVED O2: 13.84
OTHER: turb = 19.3

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAs
QA/QC SAMPLE ID: N/A
ANALYZE QA/QC SAMPLES FOR: N/A
DATE/TIME REFRIGERATED: 3/30/21
CHAIN OF CUSTODY NUMBER: NA
SHIPPED VIA: FedEx
LABORATORY: Test America Sacramento

COMMENTS / MISCELLANEOUS Equip Cal.
- water level higher than normal

PARSONS
SURFACE WATER SAMPLING RECORD

SITE NAME: SENECA ARMY DEPOT / PFOA Investigation
PROJECT NUMBER: 749674.08000
SAMPLING DATE / TIME: 3/30/21 1200
WEATHER: Sunny 65°F
SAMPLERS: Ed Ashton of Parsons
Kaity Moranz of Parsons

SAMPLE ID: ~~SW26-06~~ 26ESI30009
SAMPLING METHOD: Grab
DEPTH OF SAMPLE: 4 inches

DESCRIPTION OF SAMPLING POINT

LOCATION: SW26-06
PHYSICAL APPEARANCE: clear with organic matter
DEPTH TO BOTTOM: 6 inches
DRAINAGE DIRECTION: ~~X~~ W
UPSTREAM FROM: ~~SW26-05~~ N/A
DOWNSTREAM FROM: SW26-05

SAMPLE DESCRIPTION

COLOR: Clear
ODOR: None
SUSPENDED MATTER: Small organic matter
OTHER: No sheen

FIELD TESTS

TEMPERATURE: 11.96°C
pH: 7.87
CONDUCTIVITY: 0.447
REDOX: 59 mV
DISSOLVED O2: 12.16 mg/L
OTHER: Turb = 4.41

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYZE FOR: PFOAS
QA/QC SAMPLE ID: N/A
ANALYZE QA/QC SAMPLES FOR: N/A
DATE/TIME REFRIGERATED: 3/30/21
CHAIN OF CUSTODY NUMBER: NA
SHIPPED VIA: FedEx
LABORATORY: Test America Sacremento

COMMENTS / MISCELLANEOUS Equip calc
- water level higher than normal

APPENDIX D Groundwater Sampling Logs

Fire House
Groundwater Sampling Logs

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: FM-01

PROJECT: SEDA
LOCATION: Fivemile, FM-01

DATE: 5/24/16
INSPECTORS: A. Cook
PUMP #: GH2484
SAMPLE ID #: FMES12000 1

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1535	65	Cloudy	59	9	SE	Dry-wet

MONITORING

INSTRUMENT	DETECTOR
Horiba U-52	ORP, Temp, DO
Hach	Turbidity

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	~~15.82'~~ 15'	5	10	47.8	7.37	0.729

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	-	9.69	9.75	13.82'	-

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	9.69	700	-	8.19	11.45	0.703	6.53	183	71000
5	9.64	505	2	8.71	10.19	0.774	6.62	162	71000
10	9.62	500	2.5	8.03	10.48	0.743	6.39	174	535
15	9.60	510	3.75	7.48	10.18	0.747	6.31	178	150
20	9.67	510	4.5	6.93	10.17	0.803	6.25	180	76
25	9.71	510	4.75	6.38	10.10	0.809	6.23	180	22.7
30	9.76	510	6.5.5	5.88	10.41	0.810	6.20	179	12.3
35	9.76	510	6.25	5.63	10.29	0.810	6.19	180	6.23
40	7.76	510	7.25	5.27	10.20	0.812	6.18	179	5.44
45	7.76	515	8.00	4.89	10.10	0.816	6.14	177	3.94
50	7.77	515	8.5	4.71	10.09	0.814	6.20	177	3.73
55	7.77	515	9.25	4.51	10.05	0.824	6.22	176	2.66

FH-01

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
3				None	2 250mL	PFAS	FHES10002	1630	A. Coon 5/24/19
4				None	2 250mL	PFAS	FHESDUP0004MS	1635	A. Coon 5/24/19
5				None	2 250mL	PFAS	FHES12000MSD	0640	A. Coon 5/24/19

COMMENTS: (QA/QC?)

MS + MSD taken at this location

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWFH-1

PROJECT: SENECA army DEPOT
LOCATION: ROMULUS, NY

DATE: 3/22/21
INSPECTORS: KM
PUMP #: 18212
SAMPLE ID #: FHESI2003

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1125	55°F	Sunny	—	—	—	DRY	MiniRAE3000	Horiba
							TWS	Horiba

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.6432

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	15.40	5	10	NA	NA	NA

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	0.0	9.00	9.15	14.40	1132

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	9.07	100	0	5.27	13.11	0.872	7.90	100	459
10	9.10	100	0.15	4.26	10.50	0.918	7.39	114	75.6
20	9.13	120	0.30	4.00	9.77	0.948	7.28	120	145
25	9.15	150	0.50	4.02	9.69	0.955	7.24	123	136
30	9.15	150	0.70	3.96	9.70	0.967	7.22	124	11.0
35	9.15	150	0.90	3.94	10.34	0.976	7.23	124	>1000
40	9.15	150	1.10	3.96	10.10	0.995	7.23	126	814
45	9.15	150	1.30	3.86	10.11	0.998	7.23	125	260
50	9.15	150	1.50	3.82	10.01	1.02	7.21	123	74.3
55	9.15	150	1.70	3.89	10.30	1.02	7.22	123	27.8
60	9.15	150	1.90	4.01	10.85	1.01	7.30	124	41.6
65	9.15	150	2.10	3.89	10.37	1.03	7.24	123	20.9
70	9.15	150	2.30	3.80	10.36	1.03	7.23	122	11.0
75	9.15	150	2.50	3.76	10.49	1.01	7.23	121	91.1
80	9.15	150	2.70	3.80	10.33	1.02	7.23	120	49.5
85	9.15	150	2.90	3.81	10.37	1.03	7.23	120	22.9
90	9.15	150	3.10	3.75	10.39	1.03	7.23	122	9.46
95	9.15	150	3.30	3.72	10.38	1.03	7.23	124	5.78
100	9.15	150	3.50	3.69	10.44	1.03	7.23	125	3.43
105	9.15	150	3.70	3.70	10.36	1.03	7.23	125	2.32
110	9.15	150	3.90	3.72	10.46	1.04	7.24	124	1.95
Final				9.72	11.74	1.02	7.49	9.5	1.75

Turbidimeter 1

MWFH-1

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA + 21 parameters MOD 537			None	2/250	HDPE	FHESI20013	1330	EOA 3-23-21

COMMENTS: (QA/QC?)

Peri + HDPE tubing

Equip. Cal. prior to sampling activities

IDW INFORMATION:

Water dumped on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: FH-02

PROJECT: SEDA
LOCATION: Firehouse -02

DATE: 5/24/19
INSPECTORS: A. Cook
PUMP #: 042484
SAMPLE ID #: FH65\0002

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1100	58	Cloudy	72	12	67	Dry

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba U-52	ORP, DO, Temp
Hach	Turbidity

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.165	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	~~15~~ 14 ~~15.10~~	5	10	161	7.38	0.779

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	-	9.15	14.68'	12.40	-

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	13.75	500	1	7.31	9.65	0.612	5.65	216	84.6
5	13.65	400	1.5	3.53	9.97	0.674	6.03	214	345
10	13.91	175	2	2.58	10.18	0.687	6.16	210	989
15	-	110	2.1	3.89	10.78	0.681	6.23	200	>1000
20	-	110	2.2	6.29	11.31	0.685	6.32	200	928
25	-	110	2.21	8.57	11.52	0.678	6.35	199	384
30	-	105	2.25	8.48	11.52	0.691	6.42	195	186
35	-	105	2.30	8.48	11.52	0.691	6.42	195	65.1
40	-	105	2.40	8.39	11.65	0.695	6.50	188	99.7
45	-	105	2.50	8.41	11.62	0.696	6.51	187	58.4
50	-	105	2.61	8.44	11.52	0.700	6.53	185	36.7
55	-	105	2.66	8.41	11.50	0.692	6.53	184	2.4
60	-	105	2.71	8.35	11.44	0.698	6.53	184	0.0
65	-	105	3	8.14	11.45	0.703	6.53	183	0.0

FH-02

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1				None	2 250mL	PFAS	FHES1006 2	1400	A. Cook 5/24/14
2				None	2 250mL	PFAS	FHES120034	1405	A. Cook 5/24/14

COMMENTS: (QA/QC?)

D.U

Water level meter did not reading anything but on very low flow water was consistent

D.U. taken at this location

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER MWFI42

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW FI42D

PROJECT: Seneca Army Depot
LOCATION: Rec House

DATE: 3/22/21
INSPECTORS: MA
PUMP #: 401769
SAMPLE ID #: FMES120016

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1054	55	SUNNY	29	11	180	DRY	HORIBA	~~PID~~ Horn
							PID	TWS.

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	15.2	5	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	9.2	12.20	13.2	1103

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1110	10.2	210	.25	2.95	14.29	0.767	7.16	169	101
1115	10.5	100	.40	2.76	13.90	0.767	7.14	170	63.6
1120	10.8	100	.60	2.68	14.19	0.769	7.12	~~2173~~ 168	49.3
1125	10.9	100	.70	2.69	14.38	0.771	7.13	170	42.6
1130	10.9	100	.80	2.46	14.91	0.769	7.12	173	32.8
1135	10.9	100	1.00	2.25	15.33	0.768	7.12	173	21.6
1140	11.0	101	1.25	2.25	15.26	0.760	7.11	174	15.2
1145	11.2	101	1.40	2.25	15.18	0.756	7.10	174	13.8
1150	11.3	100	1.60	2.20	14.96	0.753	7.09	175	10.8
1155	11.4	100	1.80	2.15	14.89	0.751	7.09	175	8.76
1200	11.6	100	2.00	1.89	14.53	0.749	7.03	178	5.21
1205	11.8	100	2.10	1.65	14.14	0.740	7.02	179	3.31
1210	11.9	100	2.20	1.46	14.19	0.739	7.01	179	3.09
1215	12.0	100	2.30	1.26	14.21	0.738	7.01	180	2.91
1220	12.1	100	2.40	1.12	14.17	0.734	7.00	180	2.91
1225	12.2	100	2.50	1.02	14.91	0.732	7.00	180	16.8
1230	12.3	100	2.60	0.94	15.42	0.782	7.00	180	27.9
1235	12.2	100	2.80	0.90	15.46	0.726	6.99	181	20.9
1240	12.2	101	3.00	0.82	15.50	0.721	6.99	181	18.6
1245	12.2	100	3.20	0.82	15.50	0.721	6.99	181	181
1250	12.2	100	3.30	0.82	15.48	0.724	6.99	181	16.2

7 SAMPLE 1.00 16.10 0.760 6.99 180 —

MWFH - 2

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA + 21 PARAMETERS MOD 537			NONE	2 /250	HDPE	FHEST2001-6	1300	MHK 3/22/21

ECA/ 3-25-21

COMMENTS: (QA/QC?)

CALABRATED HORIBA, PEI + Hach
USED HACH FOR TURBIDITY

IDW INFORMATION:

Dumped Water ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: FH-03

PROJECT: SEDA
LOCATION: Firehouse FH-03

DATE: 5/31/19
INSPECTORS:
PUMP #: 042340
SAMPLE ID #: FHES12006 3

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0900	60	Sunny 60		3	90	Dry	Horiba U52	pH, o.p. Do...

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	~~0~~ 5'	0'	10'			

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE		15.09'	15.71'	13.91'	0910

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
Sondy 0910 - 0	15.09	-	-	9.55	13.06	1.04	6.70	127	11.8
Tried cycling at 1600 only 1" bottle was collected				water was cloudy at original time		to be pumped		3/4 of one	

PH-03

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					QUANT. VOLUME	TYPE			
				None	1	HAS	THE3126003	0950	6/3/19

A cool

COMMENTS: (QA/QC?)

Attempted to sample on 5/31. Only got 3/4 of a bottle. Tried again on 6/3/19, did not collect reading/ ran through PID in order to have enough water to sample.

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: FH-03

PROJECT: Seneca Army Depot
LOCATION: Romulus, New York

DATE: 10/16/19
INSPECTORS: JM/FM
PUMP #: R19240
SAMPLE ID #: FHFSI20003

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (θ - 360)	GROUND / SITE SURFACE CONDITIONS
10:15	57°F	cloudy, wind	75%	13mph	180	bare earth, dry

MONITORING

INSTRUMENT	DETECTOR
~~Horiba U-52~~	YSI Pro Plus W1755
HACH 2100Q 039981	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.08 Gal

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY NTU	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND mS/cm
	*15	5	10	49.1	6.92	1.28

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	9.15	11.84	~12.5 ft	1040

Measured DTB: 15.8

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL ~~(GALLONS)~~	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1040	9.44								
1045	9.68	100	~~100~~ FM	~~2.82~~ FM 2.52	15.6	1177	6.75	154.2	7.59
1050	9.81	100		1.71	15.7	1187	6.99	140.2	4.79
1055	10.04	80		1.55	15.8	1213	7.10	135.3	4.70
1100	10.27	80		1.46	15.8	1225	7.15	132.8	5.14
1105	10.59	80		1.35	15.8	1231	7.17	130.5	4.24
1110	11.04	80		1.28	15.8	1244	7.18	128.9	3.35
1115	11.44	80		1.20	15.8	1240	7.17	126.6	3.67
1120	11.84	80		1.12	15.8	1245	7.17	124.7	4.15

**

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/
					COUNT/ VOLUME	TYPE			DATE
				none	2x250 mL	PFAS	FHESI20003	1125	JM 10/16/19
				none	2x250 mL	PFAS	FHESI01001 (field blank)	1125	JM 10/16/19

COMMENTS: (QA/QC?)

Collected grab sample @ 1035, but discarded, since low flow was possibly

Collected field blank

** @1110, lowered tubing intake from 13.5 to 13 ft due to drawdown

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWFH-03

PROJECT: SENECA ARMY DEPOT
LOCATION: FIRE HOUSE

DATE: 3/22/2021
INSPECTORS: DAN CHAMBERLAIN
PUMP #: 074797
SAMPLE ID #: FHES1 20019

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
10:20	55	CLEAR	LOW	10	180	WET	SKINNY DIPPER	PWS.
							HORIBA U-52	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	~~79.95~~ 15.80	5	10	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	-	7.93	13.89	—	-

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10:15	7.93	200	0.0	3.99	16.42	0.925	5.77	123	26.9
10:20	8.17	150	0.3	3.21	15.77	0.938	6.09	121	13.6
10:25	8.87	150	0.5	2.97	14.66	0.952	6.47	119	5.33
10:30	9.19	150	0.7	2.59	14.13	0.962	6.95	120	5.37
10:35	9.49	150	0.9	2.78	13.99	0.970	6.94	121	5.41
10:40	9.55	150	1.1	2.72	13.16	0.975	6.94	122	3.48
10:45	9.72	150	1.2	2.64	12.94	0.981	6.93	122	2.97
10:50	9.91	150	1.4	2.49	12.61	0.990	6.93	122	2.99
10:55	10.76	100	1.5	2.33	12.48	0.994	6.93	123	3.01
11:00	11.00	100	1.6	2.24	12.37	1.00	6.94	122	2.82
11:05	11.75	100	1.7	2.19	12.28	1.01	6.94	121	3.75
11:10	12.16	100	1.8	2.07	12.14	1.02	6.94	121	3.93
11:15	12.59	100	1.9	2.02	11.96	1.03	6.94	121	3.91
11:20	12.82	100	2.0	2.01	11.97	1.03	6.94	121	2.96
11:25	13.15	100	2.1	2.00	11.99	1.04	6.93	120	2.97
11:30	13.89	100	2.2	1.95	12.03	1.04	6.93	120	3.54
									2
11:50	14.48	100	2.6	2.04	12.62	1.06	6.53	120	2.81

MW-FH-3

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFAS 1L1 PARAMETER LIST MOD 537			NA	2X250mL	HDPE	FHEST20014	11:30	3-25-21 EDA

COMMENTS: (QA/QC?)

COLLECT EB SEDAPFAS00003 @ 11:20

COLLECT FB SEDA PFAS01003 @ 11:35

- Equip. Cal. Prior to sampling activities

IDW INFORMATION:

PURGE WATER DUMPED ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: FH-04

PROJECT: Seneca Army Depot
LOCATION: Romulus, New York

DATE: 10/16/19
INSPECTORS: JM/FM
PUMP #: R19240
SAMPLE ID #: FHES120005

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1200	61°F	Cloudy, windy	70%	15	SSE	ground/dry

MONITORING

INSTRUMENT	DETECTOR
~~Horiba U-52~~	YSI Pro Plus (41755)
HACH 2100Q	(0399 81)

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.37 Gal

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	*18	8	10	62.8	7.55	1.41

Measured DTB: 16.90

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	8.74	8.74	~12.8 ft	1215

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1215	8.74	100		3.30	15.1	1199	7.02	140.2	98.7
1220	8.73	160		1.70	15.2	1207	6.84	141.0	47.7
1225	8.74	160		1.35	15.2	1209	6.81	137.6	23.3
1230	8.74	160		1.10	15.2	1201	6.85	132.2	25.2
1235	8.74	160		0.83	15.2	1195	6.87	128.7	16.9
1240	8.74	160		0.70	15.3	1191	6.89	126.6	9.36
1245	8.74	160		0.59	15.3	1195	6.90	124.6	4.53
1250	8.74	160		0.55	15.4	1185	6.92	122.8	4.21
1255	8.74	160		0.53	15.4	1197	6.92	121.2	3.94
1300	8.74	160		0.50	15.4	1205	6.92	120.0	7.92
1305	8.74	160		0.48	15.3	1209	6.93	118.8	9.02
1310	8.74	160		0.47	15.3	1208	6.93	117.7	7.80
1315	8.74	160		0.43	15.4	1208	6.94	115.8	6.45
1320	8.74	160		0.50	15.4	1209	6.95	115.0	4.32
1325	8.74	160		0.5	15.3	1209	6.95	113.9	3.64
1330	8.74	160		0.49	15.3	1209	6.94	113.3	3.57

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1				—	2×250 mL	PFAS	FHESI20005	1335	JM 10/16/19
2				—	2×250 mL	PFAS	FHESI20007	* 1340	JM 10/16/19
3				—	2×250 mL	PFAS	FHESI20005MS	1335	JM 10/16/19
4				—	2×250 mL	PFAS	FHESI20005MSD	1335	JM 10/16/19

COMMENTS: (QA/QC?)

* Field duplicate

Also collected MS & MSD

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-114

PROJECT: Seneca Army
LOCATION: Fire House

DATE: 3/22/21
INSPECTORS: [illegible]
PUMP #: 10,769
SAMPLE ID #: CHESI20022

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0758	39	Sunny	49	5	166	dry

MONITORING INSTRUMENT	MONITORING DETECTOR
H2o3A	HACH
PID	Part. Hrm

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	17.0	8	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	8.7	8.8	15.0	0810

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA			NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0815	8.9	200	.20	1.12	7.93	1.22	6.64	148	146
0820	8.8	100	.30	1.76	8.50	1.25	6.89	137	119
0825	8.8	100	.50	1.81	8.71	1.20	6.93	140	81.9
0830	8.8	100	.60	1.89	8.24	1.17	6.91	143	61.4
0835	8.8	100	.70	1.89	8.19	1.16	6.92	145	44.1
0840	8.8	100	.80	1.90	8.11	1.13	6.93	146	33.3
0845	8.8	100	.90	1.89	8.20	1.12	6.93	147	27.4
0850	8.8	100	1.00	1.89	8.33	1.11	6.93	148	21.0
0855	8.8	100	1.10	1.84	8.80	1.10	6.96	150	15.2
0900	8.8	100	1.20	1.77	8.84	1.10	6.96	151	12.6
0905	8.8	100	1.30	1.77	8.92	1.10	6.96	152	9.2
0910	8.8	100	1.40	1.77	9.03	1.10	6.96	1.52	4.05
0915	8.8	100	1.50	1.74	9.10	1.11	6.97	150	3.10
0920	8.8	100	1.70	1.73	9.19	1.11	6.97	151	2.02
0925	8.8	100	1.90	1.72	9.51	1.12	6.98	151	1.96
0930	8.8	100	2.00	1.72	9.57	1.12	6.98	151	1.77
Duplicate	8.8	—	—	4.06	10.66	1.16	6.85	157	1.88

MW FH. 4

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT. VOLUME	TYPE			
	PFOA + 21 PARAMETERS MOD 537			NONE	2/250	HDPE	FHESI20220	0935	MA 3/22/24 EOA 3-23-24

COMMENTS: (QA/QC?)

CALABRATED HORIBA + PID + Hach

USING Hach FOR TURBIDITY TEST

IDW INFORMATION:

DUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWFH-05

PROJECT: Seneca Army Depot
LOCATION: Romulus, New York

DATE: 10/18/19
INSPECTORS: JM/FM
PUMP #: R19240
SAMPLE ID #: ~~25F~~ FHE SI 20006

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1337	47	Overcast	68%	13mph	NW	Damp

MONITORING

INSTRUMENT	DETECTOR
~~Horiba U-52~~	YSI ProPlus 41755
HACH 2100Q	39981

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
~1.86 Gal

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	*20	10	10	915	7.22	1,240

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	8.45	9.94	~15	1345

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

Measured DTB: 19.55

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1347	8.68	110		13.42	12.0	1226	6.68	96.6	3.69
1352	9.00	110		10.75	12.7	1242	6.92	81.8	2.68
1357	9.45	110		9.73	12.9	1242	6.93	80.2	2.78
1402	9.91	110		9.60	12.7	1240	6.89	82.8	3.55

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1				—	2 x 250 mL	PFAS	FHESI20006	1405	JM 10/18/19

COMMENTS: (QA/QC?)

Collected grab groundwater sample on 10/16/19. Sampled via low-flow on 10/18/19 & discarded grab sample.

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW FG-05

PROJECT: SENECA ARMY DEPOT
LOCATION: FIRE HOUSE

DATE: 3/22/2021
INSPECTORS: DPC
PUMP #: 074747
SAMPLE ID #: FGEST20021

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
08:10	45	CLEAR	LOW	5	115	MOIST

MONITORING

INSTRUMENT	DETECTOR
SKENNY DIPPER	TWS.
HORIBA U-52	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = {(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)}
1.96

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	19.95	10	10	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	7.94	18.01	19.00	08:00

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
08:00	7.94	200	0.0	9.78	12.28	1.41	6.79	141	8.5
08:20	10.17	150	0.9	3.25	11.71	1.40	6.15	131	9.0
08:25	10.93	150	1.2	2.91	11.67	1.41	6.14	131	12.6
08:30	11.38	150	1.4	2.58	11.62	1.42	6.12	131	14.7
08:35	11.86	150	1.6	2.52	11.75	1.42	6.12	130	58.1
08:40	12.32	150	1.8	2.47	11.98	1.43	6.11	130	72.2
08:45	12.81	150	2.0	2.71	12.07	1.44	6.09	130	57.8
08:50	13.27	150	2.2	2.46	12.19	1.44	6.08	130	31.2
08:55	13.81	100	2.3	2.67	12.47	1.44	6.09	129	22.6
09:00	14.16	100	2.4	2.42	12.77	1.44	6.10	127	22.8
09:05	14.50	100	2.5	2.33	11.65	1.44	6.10	126	18.6
09:10	14.86	100	2.6	2.24	10.11	1.43	6.11	125	14.5
09:15	15.19	100	2.7	1.99	12.06	1.42	6.12	123	11.6
09:20	16.25	100	2.8	1.82	13.30	1.41	6.13	121	9.04
09:25	16.76	100	2.9	1.63	13.38	1.40	6.13	119	7.38
09:30	17.05	100	3.0	1.44	13.46	1.39	6.14	117	6.64
09:35	17.63	100	3.1	1.25	13.88	1.38	6.14	115	3.95
09:40	18.07	100	3.2	1.20	14.00	1.37	6.14	113	2.98
09:15	14.58	100	3.5	2.74	14.47	1.36	6.15	116	5.02

MWFH-5

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFAS + 21 PARAMETER MOD 537			NA	2X250mL	HDPE	FHE[illegible]009	09:40	3-23-22 EDR

COMMENTS: (QA/QC?)

— Calibrated equip prior to sampling activities.

IDW INFORMATION:

Water dumped on ground.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW FH-6

PROJECT: Seneca Army
LOCATION: Fire house

DATE: 3/19/21
INSPECTORS: JMO
PUMP #: A01769
SAMPLE ID #: FHES26@2

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1438	34	Sunny	39	11	45	Frozen	Horiba	Mach
							~~PID~~ PID	Hach

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = |(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT) |

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	17.75	5	10	NA	NA	NA

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	0.1	5.7	10.5	15.75	1450

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1455	7.9	200	.50	2.16	9.62	1.51	6.61	139	21.8
1500	8.2	100	.75	1.96	8.03	1.12	6.64	136	18.1
1505	8.3	100	1.00	1.41	8.66	1.19	6.64	138	17.6
1510	8.4	100	1.25	1.20	8.28	1.21	6.65	140	18.7
1515	8.7	100	1.50	1.20	8.66	1.21	6.64	142	15.6
1520	9.0	100	1.75	1.20	7.96	1.22	6.64	145	13.0
1525	9.4	100	2.00	1.15	7.95	1.22	6.64	146	10.6
1530	9.7	100	2.25	1.12	7.93	1.22	6.64	148	10.6
1535	10.2	100	2.50	1.12	7.93	1.22	6.64	148	7.90
1540	10.5	100	2.75	1.12	7.93	1.22	6.64	148	4.26
1545									
1550									
>	Sample		3.00	1.12	7.93	1.22	6.64	148	6.10

MWFH-6

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
	Pump #21 Peristaltic MW537			None	1/1000	HDPE	THESF20022	1545	MHF 3/19/24

EDA 3-23-24

COMMENTS: (QA/QC?)

Horiba + PID Calibrated
Using Hach for Turbidity

IDW INFORMATION:

Water Disposed of on Ground

SAMPLING RECORD - GROUNDWATER

07

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWFH - 06

PROJECT: Seneca Army Depo
LOCATION: Fire House

DATE: 06-29-20
INSPECTORS: MCH AS
PUMP #: 042467
SAMPLE ID #: ~~[illegible]~~ FHESI20009/10

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0855	73°F	Sunny	70%	3 mph	300	Dry

MONITORING	
INSTRUMENT	DETECTOR
Peri Pump	YSI 550A
	YSI 556

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	-	-	-	-	-	-

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0	8.19	11.42	16.72	0850

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	8.77	225	0.1	36.6	10.07	0.919	6.58	70.4	11.30
5	10.4	200	1.0	35.1	10.06	0.904	6.61	39.8	10.59
10	11.03	200	1.75	34.4	10.06	0.907	6.61	8.9	11.70
15	11.43	200	2.25	33.5	10.06	0.915	6.57	5.3	11.21
20	11.82	200	2.50	32.0	10.06	0.912	6.55	3.4	10.50
25	12.01	200	3.00	31.4	10.06	0.912	6.56	2.4	14.69
30	12.35	200	3.50	33.8	10.06	0.911	6.55	1.7	25.21

Collected at 0945

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
				None	2/250	Plastic	FHES120009	0945	
				None	2/250	Plastic	FHES120010	0950	

COMMENTS: (QA/QC?)

Field Dupe collected @ 0950. FHES120009/10

Sample @ 0945 FHES120004

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWP4-7

PROJECT: Seneca Army
LOCATION: Fire house

DATE: 3/19/21
INSPECTORS: Mike
PUMP #: A0176?
SAMPLE ID #: FHES120323

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1248	28	sunny	46	13	0	FROZEN

MONITORING INSTRUMENT	MONITORING DETECTOR
HORIBA	Itech
PID	Tvs.

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	17.7	5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	6.40	9.0	15.7	1253

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1300	7.90	200	.50	2.03	8.62	0.786	6.81	135	10.0
1305	7.90	100	.75	1.81	8.76	0.787	6.01	135	0.0
1310	8.2	100	.90	1.65	8.88	0.796	5.82	135	6.0
1315	8.4	100	1.2	1.45	8.91	0.813	5.75	135	0.0
1320	8.5	100	1.4	1.40	9.10	0.818	6.55	135	0.0
1325	8.6	100	1.5	1.32	9.16	0.823	6.73	135	0.0
1330	8.8	100	1.7	1.29	9.16	0.828	6.71	134	0.0
1335	9.0	100	1.9	1.29	9.16	0.828	6.60	134	6.0
1340	9.0	100	2.2	1.29	9.16	0.828	6.40	134	6.0
1345	9.0	100	2.5	1.28	9.16	0.828	6.20	133	0.0
1350	9.0	100	2.8	1.27	9.16	0.828	5.81	133	6.0
1355	9.0	100	3.0	1.29	9.16	0.828	5.71	133	0.0
1400	9.0	100	3.2	1.29	9.16	0.828	5.71	132	0.0
1405	Sample			6.21	10.85	0.452	6.10	166	0.0

MW FH-7

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
	PFOA +21 PFAS MW. MD 537			NONE	1/250	HDPE	FHESI20023	1405	MH 3/9/21

EQM/ 3-23-21

COMMENTS: (QA/QC?)

HORIBA + PID CALIBRATED

USING HACH TO CHECK TURBIDITY

IDW INFORMATION:

DUMP WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW FH-08

PROJECT: Seneca Army Depot
LOCATION: Firehouse

DATE: 6/24/20
INSPECTORS: D. Cook
PUMP #: 042467
SAMPLE ID #: FHES200611 MS/MSD

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1015	73	Sunny	79%	15-13	180	Dry

MONITORING INSTRUMENT	MONITORING DETECTOR
YSI 556	ORP, pH, spec cond
YSI 550a	DO, Temp

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	-	-	10	-	-	-

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	7.45	16.29	19.71	1020

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1025	8.54	425	-	6.05	11.4	0.888	~~7.15~~	-5.9	~~7.15~~
1035	10.01	250	1.0	60.5	12.8	0.882	7.01	1.4	5.42
1040	12.19	200	1.75	53.8	13.4	0.880	7.00	1.8	39.99
1050	13.79	150	2.25	65.5	12.8	0.887	6.99	2.2	82.0
1100	14.79	150	2.50	60.6	12.6	0.880	7.00	3.0	67.23
1105	15.15	150	2.75	59.6	12.3	0.879	7.01	3.3	55.72

Collected at 1115, water running dry. Collected sample

SAMPLING ORDER	PRESERVATIVES	BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
		COUNT - VOLUME	TYPE			
	None	2/250	P/Plastic	FHES12000111	1115	

COMMENTS: (QA/QC?)

MS/MSD Collected

Named - FHES12000111 @1115

MS - FHES12000111MS @1120

MSD - FHES12000111MSD @1125

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWF14-8

PROJECT: Seneca Army
LOCATION: Fire House

DATE: 3/19/20
INSPECTORS: MA
PUMP #: A61769
SAMPLE ID #: FIELD0024

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0916	21	SUNNY	56	13	0	FROZEN

MONITORING INSTRUMENT	MONITORING DETECTOR
HORIBA	H&H
PID	Heron

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	17.50	5	15	MA	MA	MA

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	0.1	6.35	8.6	15.50	0820

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	MA	MA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0825	6.50	175	1.50	6.95	13.18	0.761	7.58	66	216
0830	7.11	150	1.00	7.01	10.76	0.760?	7.64	71	215
0835	7.50	125	1.25	7.17	8.81	0.765	7.77	74	218
0845	7.90	100	1.50	7.29	7.95	0.769	7.82	75	219
0855	7.98	100	1.75	7.20	7.50	0.773	7.61	78	221
0905	7.90	100	2.00	6.60	6.90	0.779	7.42	81	223
0915	8.2	100	2.25	5.10	6.26	0.782	7.36	84	226
0925	8.5	100	2.50	4.62	5.90	0.797	7.29	89	225
0935	8.7	100	2.75	3.41	5.20	0.797	7.27	91	216
0945	8.9	100	3.00	2.51	5.60	0.797	7.27	93	110
0955	9.1	100	3.25	2.35	5.60	0.796	7.27	93	92
1005	9.3	100	3.50	2.35	5.60	0.797	7.27	93	90
1015	9.50	100	4.0	1.45	6.11	0.768	7.04	96	61
1020	10.0	150	4.5	1.40	6.56	0.814	7.06	96	40
1025	10.4	100	5.0	1.40	6.56	0.814	7.06	96	31.8
1030	10.7	100	5.25	1.40	6.4	0.814	7.06	96	22.8
1035	10.9	100	5.50	1.40	6.57	0.814	7.06	96	35.1
1040	11.2	100	5.75	1.40	6.56	0.814	7.06	97	50.6
1050	10.6	100	6.00 ~~5.95~~	3.32	6.28	0.751	7.06	106	43.50
1100	10.4	100	6.50	3.52	6.21	0.751	7.06	106	26.80
1105	10.2	150	7.0	4.07	6.11	0.738	7.04	114	15.3

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #:

PROJECT: Seneca Army
LOCATION: Fire House

DATE: 3/19/21
INSPECTORS: NA
PUMP #: AQ 1769
SAMPLE ID #: FHES20034

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
~~1145~~	~~27~~	Sunny	47	15	0	Frozen	Horiba	Hach
0816	21						PID	Hnu

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.153	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	17.50	5	15	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	6.35	9.6	15.50	0820

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1115	10.0	100	6.21	4.32	6.27	0.733	7.00	120	7.9
1120	10.0	100	6.40	4.32	6.28	0.733	6.97	123	7.4
1125	10.0	100	6.62	4.31	6.31	0.732	6.97	123	6.0
1130	9.6	100	7.00	4.20	6.32	0.732	6.97	125	3.3
> Sample				3.66	6.21	0.746	6.99	128	21.9

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SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	FOP+BLANKS			N/A	1/250	HDPE	FHEST200424	1131	WH 3/19/21
	MID 537								

EDA/ 3/19/21

COMMENTS: (QA/QC?)

CALIBRATED HORIBA + PID
USING HACH FOR TURBIDITY

IDW INFORMATION:

DUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-95 FH

PROJECT: SENECA army DEPOT
LOCATION: FIRE HOUSE AREA

DATE: 9/14/2020
INSPECTORS: J. GOLDTHWAIT
PUMP #:
SAMPLE ID #: MWFH-95-FHES1-2092

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
—	—	—	—	—	—	—	PERI PUMP	
							#1797	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	22.7' 20	5	15	TOO SHALLOW TO MEASURE		

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	22.22'	DIRECT PUMP TO SAMPLES		

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
08:30	22.22'	—	—	—	—	—	—	—	—
		OTW	too shallow for measurements						

MBATH-9S
~~MW-9S~~

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFAS, mod 537, 21 compounds			NONE	2/ 250mL	plastic	FHESI0102	08:30	CDM 10-15-20

COMMENTS: (QA/QC?)

Well runs dry after 2 bottles

FB = FHESI0102

FB = FHESI0106

- Well purge dry prior to sampling and let recharge. well is slow producer and did not recharge to full. Static DTW. Collected grab sample for analysis.
- HDPE; Silicon tubing used

IDW INFORMATION:

- IDW was put in dumpster; sw on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWFH-9S

PROJECT: SENE
LOCATION: Romulus, NY

DATE: 3/22/21
INSPECTORS: KM
PUMP #: 18212
SAMPLE ID #: FHESI20025

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0920	48°F	Sunny	—	—	—	Dry	MiniRAE3000	Peri.
							Horiba	TWS,

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
8.7636

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	23.21	5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	9.81	13.10	21.21	0930

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	10.04	225	0	7.07	12.81	1.50	5.45	204	0.0
5	10.30	150	0.2	4.87	9.32	1.61	6.90	158	0.0
10	10.46	150	0.4	4.87	9.28	1.60	7.07	154	0.0
15	10.69	150	0.6	4.80	9.30	1.59	7.19	149	0.0
20	10.88	150	0.8	4.81	9.47	1.58	7.24	146	0.0
25	11.09	150	1.0	4.91	9.62	1.57	7.27	141	0.0
30	11.23	150	1.2	4.91	9.70	1.57	7.29	138	0.0
40	11.64	150	1.6	4.88	10.11	1.56	7.32	132	0.0
50	12.10	150	2.0	4.76	10.37	1.56	7.33	127	0.0
60	12.58	150	2.4	4.73	10.60	1.55	7.34	122	0.0
65	12.74	150	2.6	4.72	10.65	1.55	7.34	121	0.0
70	12.95	150	2.8	4.66	10.75	1.55	7.34	119	0.0
75	13.10	150	3.0	4.63	10.81	1.55	7.34	118	0.0
Final				8.68	13.51	1.56	7.50	127	0.0

MWFH-95

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOAS + 21 Parameters ~~537~~ Mod537			None	2/250mL	HDPE	FHESI20025	1050	EJH- 3-23-21

COMMENTS: (QA/QC?)

Peri pump + HDPE tubing

Cal. Equip. Prior to sampling activities.

IDW INFORMATION:

Water dumped on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWFH-9D

PROJECT: SENECA ARMY DEPOT
LOCATION: Fire House Area

DATE: 8/24/2020
INSPECTORS: JHS
PUMP #: 4020426
SAMPLE ID #: FHESI20014
FHESI20018

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1220	70°	SUNNY	-	-	-	DRY

U-52 MONITORING

INSTRUMENT	DETECTOR
043835	043836
Manson	HORIBA

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	62	42-62	20	—	—	-

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	-	45.6	59.0	—	-

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND mS/cm	pH	ORP (mV)	TURBIDITY (NTU)
1335	45.6	300		8.87	19.21	0.718	7.48	51	41
1340	46.95	300		7.87	18.14	0.707	7.88	59	35.5
1345	47.7	300		9.17	17.10	0.716	8.00	61	31.8
1350	49.05	300		9.16	16.62	0.718	8.22	62	28.9
1405	50.0	300		8.37	19.72	0.703	8.19	63	31.8
1410	50.8	300		8.70	16.99	0.719	8.27	67	31.0
1415	51.65	300		9.52	16.66	0.717	8.25	68	34.5
1420	52.35	300		8.87	18.47	0.732	8.25	69	40.0
1430	53.26	300		8.27	17.67	0.710	8.27	73	51.1
1440	54.0	300		9.67	16.58	0.719	8.28	75	60.6

6 GALLONS

3.64 GAL

Sampled with duplicates and equipment blank

Calibration 3.79 → 4.01 pH
4.50 mS/cm
0.0 NTU
9.24 mg/LDO

<4.5% 3% 3% ±0.1 ±10 10% >5

MWPH-90

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFAS			None	2/250mL	plastic	FHEST 20014	1435	EBH-10-25-2
	Mod 537						FHEST 20018	1440	d
	21 compounds						(DUP)		

COMMENTS: (QA/QC?)

-HDPE; silicon tubing used

IDW INFORMATION:

-IDW in dumpster; GW on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWFH-9D-UP

PROJECT: Seneca Army Depot - FH
LOCATION: Romulus, NY

DATE: 3/29/21
INSPECTORS: R Inchiosa
PUMP #: 24737
SAMPLE ID #: FHESI20026UP
DUP: FHESI20030

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0800	34°F	Cloudy	70%	18 mph	WNW	damp

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	PID
Turbidimeter	Heron

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1 well volume = 36.3 gal

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (~~TOC~~)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	65.01'	42' bgs	20	N/A	N/A	N/A

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	9.47'	24.94'	~47'	0900

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	N/A	PUMP AFTER SAMPLING (cps)	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
5	9.68	160	0.21	3.64	8.20	0.989	5.50	152	22.3
10	10.05	160	0.42	1.80	8.19	0.968	5.86	137	4.59
20	10.59	160	0.64	0.88	7.53	0.954	6.17	127	8.90
25	10.99	200	0.9	0.80	7.44	0.983	6.26	124	22.1
35	11.86	120	1.21	0.54	7.31	0.979	6.49	116	4.80
45	12.35	200	1.73	0.49	6.92	0.976	6.60	112	1.84
50	12.76	120	1.88	0.51	6.86	0.985	6.63	109	4.16
55	13.13	120	2.03	0.55	6.95	0.995	6.66	108	1.50
65	13.70	200	3.03	0.54	7.37	0.982	6.72	104	25.6
75	14.62	260	3.9	0.71	7.49	0.992	6.77	100	4.77
85	15.32	230	4.5	0.85	7.89	1.01	6.79	98	6.17
95	17.42	190	5.0	1.22	9.64	0.987	6.82	93	2.53
110	19.09	270	6.1	1.36	9.12	0.993	6.87	90	4.19
120	19.17	230	6.7	1.40	9.34	0.974	6.92	87	3.62
130	20.91	190	7.2	1.46	9.81	0.961	6.93	85	1.74
140	21.68	260	7.9	1.57	10.17	0.960	6.92	83	4.22
150	22.73	260	8.6	1.73	10.86	0.961	6.93	82	6.69
160	23.55	190	9.1	1.53	11.24	0.937	6.96	81	6.10
170	23.72	190	9.6	1.48	11.39	0.928	6.96	83	2.03
180	24.94	225	10.2	1.82	11.66	0.939	6.95	83	3.74
Post-sampling	26.80	–	~11.25	2.44	12.33	0.958	6.96	83	2.89

MW FH-90_GP

SAMPLING ORDER		PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
				COUNT/ VOLUME	TYPE			
	~~VOC's 8260B~~ (RI)							EDA/5-5-21
	PFOA, Mod 537, + 21 compounds		~	2/125mL	HDPE	FHESI20026GP	1215	
	"		"	"	"	FHESI20030	1220	

Duplicate FHESI20030 @ 1220

COMMENTS: (QA/QC?)

Headspace PID: 0.0 ppm

- Sampled using monsoon pump & HDPE tubing.
- Varying flow rates ~~recorded~~ (RI) due to decreasing pressure head above monsoon pump; constantly changing Percent Power on control box as water level decreases

- Equip Cal. prior to use.

Turbidimeter Cal: 20 = 19.7 NTU
100 = 104 NTU
800 = 810 NTU 10 NTU standard = 10.4 NTU (passed)

IDW INFORMATION:

- Waste water dumped on ground
- PPE, tubing, solid waste in dumpster.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-400 PR

PROJECT: SEAD
LOCATION: MW-PR-100 Fire House Area

DATE: 8/31/2020
INSPECTORS: DAN CHAMBERLAND
PUMP #: BAILER
SAMPLE ID #: FHES120015

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
—	—	—	—	—	—	—

MONITORING INSTRUMENT	MONITORING DETECTOR
Baile - PID	FOA Free

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	57	37	20	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	—	55.10	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
12:15	53.05		0.0	8.23	16.11	2.26	7.58	-9	OP
12:30	55.10	~~100~~ 252	1.5	9.04	17.80	1.27	8.06	-24	OP

MW Pit-10D

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA Mod 537.1 21 compounds			NA	2X250mL	PLASTIC	+ FMG 2001.5	10:00	9/1/2020

COMMENTS: (QA/QC?)

- well purged dry. Nova recharge to 80% static DTW. Sample collected for analysis.

slow yield well.

-HDPE : Silicon tubing used.

IDW INFORMATION:

-IDW in dumpster : gw on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWFH-100

PROJECT: SENECA army DEPOT
LOCATION: FIRE HOUSE

DATE: 3/26/2024
INSPECTORS: DPC
PUMP #: 24739
SAMPLE ID #: FHFSI20029
FHFSI20027-DUP

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS
10:00	55	CLOUDY/WINDY	MED	15-20	270	PAVEMENT

MONITORING

INSTRUMENT	DETECTOR
HORIBA U-52	Mini Sonde
SKINNY DIPPER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - ISTABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
3.7

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	54.28	37	20	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	21.16	48.26	52.00	09:45

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)	
09:45	21.16	300	0.0	0.44	16.61	2.13	7.12	151	89.1	
09:50	21.96	360	0.6	0.60	15.22	2.11	7.31	145	67.6	
09:55	22.57	350	1.2	0.51	15.23	2.10	7.35	120	68.3	
10:00	23.78	370	1.8	0.47	15.25	2.09	7.29	139	61.9	
10:05	25.01	370	2.4	0.55	15.47	2.07	7.28	131	54.8	
10:10	25.65	370	3.0	0.79	15.40	2.05	7.37	127	42.7	
10:15	26.75	370	3.6	0.90	15.60	2.07	7.36	125	41.2	
10:20	27.24	370	4.2	0.90	15.48	2.02	7.36	121	38.6	
10:25	27.70	370	4.8	0.89	15.32	2.01	7.36	115	28.4	
10:30	28.31	370	5.2	0.90	15.25	2.00	7.36	114	26.3	
10:35	28.85	370	5.4	0.92	15.26	1.99	7.35	111	27.9	
10:40	29.48	370	5.8	0.95	15.39	1.99	7.35	106	29.6	26.1
10:45	30.05	370	6.1	0.98	15.58	1.98	7.35	102	30.05	24.3
10:50	31.06	250	6.4	1.06	15.60	1.97	7.34	96	24.2	
10:55	31.89	250	6.6	1.12	15.76	1.96	7.32	92	24.6	
11:20	34.50	250	6.8 7.6	1.34	17.81	1.93	7.31	74	40.8	
11:25	35.15	200	7.9	1.53	16.36	1.90	7.33	71	37.1	
11:30	35.81	200	8.1	1.58	16.28	1.92	7.33	70	31.2	
11:35	36.28	200	8.4	1.62	16.16	1.94	7.32	69	26.7	
11:40	37.12	200	8.6	1.68	16.14	1.94	7.32	69	28.1	
11:45	37.75	200	8.9	1.74	16.18	1.93	7.32	69	29.4	

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWFH-10D

PROJECT: SENECA army DEPOT
LOCATION: FIREHOUSE

DATE: 3/26/2021
INSPECTORS: OPC
PUMP #: 24739
SAMPLE ID #: FHES20029
FHES20027-DUP

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS
11:50	45	RAIN, CLOUDY	4264	20	270	PAVEMENT

MONITORING

INSTRUMENT	DETECTOR
SKINNY DIPPER	mars sea
HORIBA U-52	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(TOTAL WELL DEPTH - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	54.28	37	20	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	21.16	48.26	52.0	09:45

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
11:50	38.51	200	9.1	1.85	15.92	1.92	7.32	69	26.1
11:55	38.76	200	9.3	1.88	15.96	1.92	7.32	69	26.5
12:00	39.05	200	9.5	1.91	16.00	1.93	7.32	68	27.0
12:05	39.38	200	9.7	1.91	16.06	1.92	7.32	68	26.2
12:10	39.74	200	9.9	2.00	16.16	1.92	7.31	67	25.5
12:15	39.96	200	10.1	2.02	16.20	1.92	7.31	66	26.2
12:20	40.20	180	10.3	2.04	16.29	1.92	7.32	66	27.6
12:40	40.12	180	11.3	2.09	16.51	1.92	7.31	65	29.7
12:45	40.92	180	11.6	2.12	16.71	1.91	7.31	61	28.8
12:50	41.61	180	11.8	2.16	16.81	1.90	7.32	59	27.9
12:55	42.02	180	12.0	2.24	16.13	1.92	7.32	59	28.8
13:00	42.71	200	12.4	2.23	16.38	1.92	7.32	59	36.2
13:05	43.20	200	12.6	2.21	16.68	1.91	7.32	59	42.1
13:10	43.8	200	12.4	2.22	16.42	1.91	7.32	59	47.6
13:15	44.25	200	13.2	2.23	16.76	1.90	7.32	60	44.25 39.1
13:20	44.58	200	13.4	2.25	16.42	1.90	7.32	58	39.2
13:25	44.92	200	13.7	2.27	16.55	1.89	7.32	57	39.4
13:30	45.15	200	13.9	2.64	16.26	1.87	7.30	58	54.3
13:35	45.45	200	14.2	2.48	16.27	1.89	7.29	58	51.6
13:40	46.72	200	14.5	2.42	16.57	1.88	7.32	56	49.5
13:45	47.62	200	14.8	2.34	16.47	1.88	7.32	55	49.8
13:50	48.16	200	15.1	2.29	16.02	1.88	7.33	55	48.40
14:40	49.60	200	16.9	2.75	15.64	1.96	7.42	71	1.54

MWFH -100

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA 21 PARAMETER MOD 537			NA	2X250ML	HDPE	FHESI20027-ON	13:50	EOA/5-5-21

COMMENTS: (QA/QC?)

DUPLICATE FHESI20029 COLLECTED @ 14:00

MS/MSD COLLECTED

EB COLLECTED @ 14:30

Equip cal. prior to samps.

IDW INFORMATION:

PURGE WATER DUMPED ON THE GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: ~~BKGMW~~FH-90-DW

PROJECT: Seneca Army Depot - FH
LOCATION: Romulus, NY

DATE: 3/29/21
INSPECTORS: R. Inclima
PUMP #: 24737
SAMPLE ID #: FHESI20026-DW

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1240	41°F	Partly Cloudy	48%	16 mph	W	damp/dry

MONITORING

INSTRUMENT	DETECTOR
Horiba	PID
Turbidimeter	Hach

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN ~~(TOC)~~	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	65.01'	42' bgs	20	N/A	N/A	N/A
DATA COLLECTED AT WELL SITE	**PID READING (OPENING WELL)**	**DEPTH TO STATIC WATER LEVEL (TOC)**		**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
	0.0 ppm	27.80'		45.05'	~57'	1240
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	N/A		PUMP AFTER SAMPLING (cps)	N/A	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10	29.25	260	0.7	2.55	12.66	0.952	7.01	80	4.32
20	29.85	150	1.1	2.37	12.20	0.954	7.01	79	3.85
30	30.58	80	1.3	2.28	12.10	0.953	7.01	76	6.36
40	31.40	300	2.1	2.32	12.59	0.944	6.99	75	3.99
50	32.42	260	2.8	2.30	12.50	0.955	7.01	74	2.90
60	33.19	150	3.2	3.47	12.32	0.950	6.99	76	3.22
70	34.86	600	4.8	2.54	13.24	0.952	7.00	75	2.65
80	36.04	260	5.5	2.54	13.32	0.951	6.99	75	3.09
90	37.15	380	6.5	2.50	13.16	0.955	7.01	74	3.90
100	37.90	190	(R2) ~~6.9~~ 7.0	2.84	12.80	0.954	7.01	75	2.17
110	39.22	340	7.9	2.69	13.08	0.958	7.01	75	3.05
120	39.91	190	8.4	2.59	13.15	0.953	7.02	75	2.08
130	40.45	190	8.9	2.72	13.06	0.962	7.02	76	2.40
140	41.61	260	9.6	2.62	13.02	0.949	7.03	76	2.28
150	42.59	225	10.2	2.64	13.13	0.944	7.02	76	4.00
160	44.25	490	11.5	2.61	13.81	0.948	7.02	77	2.37
170	45.05	120	11.8	2.76	13.13	0.949	7.03	78	1.70
Post-sample -	45.27	-	~12.2	3.12	13.22	0.952	7.04	81	5.56

SEDAPFAS00009 - EB @ ~~1545~~ (R2) 1545

MW FH-9D-ON

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
	PFAS, Mod. 537, + 21 compounds			~	2 / 250mL	HDPE	FHESI2024-DW	1535	EDM/5-5-24

COMMENTS: (QA/QC?)

Headspace PID: 0.0 ppm

- Sampled using monsoon pump + HDPE tubing
- Purged ~ 11.25 gallons of water at a shallower depth (47')
- varrying flow rate is the result of decreasing pressure head as more water gets pumped out; must adjust Percent Power on monsoon pump control box as pressure head changes

Equip cal. prior to use.

See calibration info. on MWFH-9D-UP sampling record comments

IDW INFORMATION:

- waste water dumped on ground.
- PPE, tubing, solid waste in dumpster.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-FH100-up

PROJECT: Seneca Army Depot
LOCATION:

DATE: 9/2/21
INSPECTORS: Ahr
PUMP #: NA
SAMPLE ID #: FHES2002?-UP

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	DETECTOR
1500	34	Sunny/windy	39	15	315	Dry	Horiba	Hach
							PID	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	57	37.0	20	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	48.6	48.6	NA	NA

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	NA	PUMP AFTER SAMPLING (cps)	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1510	48.6	—	—	8.64	12.6	1.64	8.3	-19	>1000

MWFH-100-UP

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA T21PARAA MOD 537			NONE	2/250	HDPE	FHESI200 27-UP	1515	MH 4/2/21
	PFOA +21PARAA MOD 537			NONE	2/250	HDPE	SEDAPFAA00 17	1520	MH 4/2/21

eM 5-6-21

COMMENTS: (QA/QC?)

HORIBA, PID + HACH CALIBRATED

HACH USED FOR TURBIDITY

IDW INFORMATION:

NO WATER DUMPED

SAMPLING RECORD - GROUNDWATER MWFH-15

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: ~~MW-11S~~

PROJECT: SENECA army DEPOT
LOCATION: FIRE HOUSE AREA

DATE: 9/14/2020
INSPECTORS: J. Goldthwait
PUMP #: PERI PUMP #1797
SAMPLE ID #: FHES12007 MWFH-15-

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
—	—	—	—	—	—	—	NOT USED	TOO SHALLOW

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC) 25ft bgs	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	27.4' TOC	5	20	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	26.25' TOC	26.15	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
09:30	26.15	NA	NA	NA	NA	NA	NA	NA	NA

MWFH-11S ~~MW-11S~~ ~~PW-FH~~ FH

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA's				2/250ml	PLASTIC	FHEL 2017	09:30	EJH/ 10/15/20
	MOD 537, 21 compounds			NONE					

COMMENTS: (QA/QC?)

① Well not purged due to low water vol. sample just collected for analysis. Sample turbid.

- HDPE; Silica tubing used

IDW INFORMATION:

- ~~IDW~~ IDW put in dumpster; GW on ground.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW FH-11

PROJECT: SENECA army DEPOT
LOCATION: FIRE HOUSE

DATE: 3/19/2021
INSPECTORS: DAN CUMBERLAND
PUMP #: —
SAMPLE ID #: FHESE20028

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
08:00	25	CLEAR, WINDY	MED	15	25	FROZEN	Horiba	Hrun.
							Turb meter	Per

PSD

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	25.0	5	20	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	0.0	8.47	25.75	23.0	08:00

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
08:00	8.47	200	0.0	7.98	6.27	0.991	4.93	182	5.2
08:05	9.15	200	0.2	1.74	7.94	1.01	5.79	143	2.7
08:10	10.30	200	0.5	1.46	8.07	1.04	6.01	134	8.53
08:15	11.52	200	0.7	1.39	8.18	1.06	6.10	128	8.07
08:20	12.87	200	1.0	1.36	8.02	1.06	6.12	123	8.02
08:25	14.00	200	1.2	1.34	7.85	1.07	6.15	119	7.96
08:30	14.96	200	1.5	1.40	7.80	1.06	6.20	112	8.00
08:35	15.97	200	1.7	1.27	7.52	1.06	6.20	107	8.76
08:40	15.97	200	1.9	1.25	7.55	1.06	6.20	102	9.31
08:45	17.60	200	2.2	1.22	7.58	1.06	6.21	98	9.80
08:50	18.98	200	2.4	1.10	7.58	1.07	6.27	96	8.34
08:55	19.76	100	2.5	1.03	7.65	1.07	6.25	87	9.26
09:00	20.08	100	2.6	0.97	7.79	1.08	6.24	84	10.0
09:05	20.25	100	2.7	0.98	7.88	1.08	6.28	80	10.2
09:10	20.71	100	2.8	0.91	7.93	1.08	6.32	74	10.0
09:15	21.07	100	2.9	0.86	7.20	1.09	6.35	70	9.83
09:20	21.52	100	3.0	0.81	6.91	1.09	6.39	67	9.67
09:25	21.98	100	3.1	0.79	6.95	1.10	6.39	65	8.21
09:30	22.45	100	3.2	0.77	7.09	1.10	6.40	62	7.95
09:35	22.96	100	3.3	0.77	7.00	1.00	6.40	59	8.31
09:40	23.30	100	3.4	0.77	6.96	1.10	6.40	57	8.78

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW14-11

PROJECT: SENECA ARMY DEPOT
LOCATION: FIRE HOUSE

DATE: ~~Aug 14 4 2014~~
INSPECTORS: DPC
PUMP #: -
SAMPLE ID #: FHRS120028

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
See page 1								

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	25	5	20	-	-	-
	PID READING (OPENING WELL)	**DEPTH TO STATIC WATER LEVEL (TOC)**	**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**	
DATA COLLECTED AT WELL SITE	0.0	8.47	25.75	26.0	09:00	
	RADIATION SCREENING DATA	**PUMP PRIOR TO SAMPLING (cps)**	-	**PUMP AFTER SAMPLING (cps)**	-	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
09:45	23.76	100	3.5	0.81	6.96	1.11	6.40	55	7.39
09:50	24.10	100	3.6	0.79	7.10	1.11	6.40	53	7.00
09:55	24.51	100	3.7	0.72	7.06	1.11	6.41	52	8.37
10:00	24.96	100	3.8	0.66	6.99	1.11	6.42	50	9.59
10:05	25.28	100	3.9	0.64	6.97	1.11	6.42	51	10.2
10:10	25.57	100	4.0	0.62	6.95	1.11	6.42	52	11.1
10:15	25.75	100	4.1	0.60	6.94	1.11	6.41	52	15.1
SAMPLE		100							
10:30	26.15	100	4.2	4.24	6.63	1.14	6.50	69	337

MWFA-11

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA+21 PARAMETER MOD 537			NA	2x250mL	HDPE	FHESI20029	10:40	EGM/3-15-21

COMMENTS: (QA/QC?)

All equip calibrated prior to sampling efforts

EB: SEDAPFAS00002 @ 1045

FB: SEDAPFAS01002 @ 1050

IDW INFORMATION:

PURGE WATER PUMPED ON THE GROUND

SEAD-25
Groundwater Sampling Logs

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-1

PROJECT: Seneca Army
LOCATION: SEAD-25

DATE: 3/23/21
INSPECTORS: MH
PUMP #: A01769
SAMPLE ID #: 25EST20024

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0755	39	Sunny	59	5	180	Dry	Horiba	Hach
							PID	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)] theron

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	78.74	3.1	1	NA	NA	NA

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	0.1	5.9	6.2	6.5	0810

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
			See Notes						

MW25-1

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFAS + 21 Parameters No.2 537			NONE	2/250	HDPE	25ESI 20024	0815	MH 3/23/21

EOM/ 3-23-21

COMMENTS: (QA/QC?)

- well not purged due to low water column made; historical well slow recharge.

- CALIBRATED HORIBA, PID + Hach

USING Hach FOR TURBIDITY

- NO READINGS TAKEN DUE TO LOW WATER AND HISTORICAL Long TIME FOR WELL TO Recharge.

IDW INFORMATION:

N) WATER DUMPED ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-02

PROJECT: SENECA army DEPOT
LOCATION: SEAD 25

DATE: 7/22/2021
INSPECTORS: DPC
PUMP #:
SAMPLE ID #: 25ES22005

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
14:00	60	CLEAR	MED	5	0	DRY

MONITORING

INSTRUMENT	DETECTOR
HNU PID 10.52	Rae Tube
SKINNY DIPPER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
~~10.64~~ 1.0

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	10.64	3.4	4	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	4.72	8.54	9.5	13:40

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
13:40	4.72	150	0.C	1.95	15.30	1.28	6.49	-111	10.8
13:50	5.32	150	0.4	0.44	13.60	1.25	6.03	-120	21.8
14:00	6.16	150	0.9	0.49	12.78	1.14	6.09	-108	12.6
14:10	6.57	150	1.3	0.68	12.99	1.01	6.16	-96	11.7
14:15	6.72	150	1.5	0.75	13.19	0.985	6.17	-93	2.12
14:20	6.80	150	1.7	0.67	13.29	0.985	6.15	-95	6.90
14:25	6.98	150	1.9	0.56	13.44	0.985	6.14	-98	5.68
14:30	7.10	100	2.1	0.41	13.57	1.02	6.09	-103	7.95
14:35	7.27	100	2.2	0.38	13.72	1.06	6.04	-105	7.85
14:40	7.44	100	2.3	0.35	13.89	1.11	6.01	-107	5.57
14:45	7.60	100	2.4	0.34	14.06	1.14	5.99	-109	4.16
14:50	7.71	100	2.5	0.30	14.10	1.18	5.97	-110	4.32
14:55	7.81	100	2.6	0.27	14.13	1.21	5.95	-111	4.51
15:05	8.19	100	2.8	0.29	14.35	1.25	5.92	-112	1.81
15:10	8.33	100	2.9	0.26	14.42	1.26	5.92	-112	1.31
15:15	8.51	100	3.0	0.27	14.45	1.23	5.91	-114	2.87
15:30	8.90	100	3.3	1.31	16.62	1.24	6.02	-107	13.1

MW25-2

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFAS 21 PARAMETER M00537			NA	2X250ML	HDPE	25ESI20025	15:15	CDH/3-22-24
2	VOC			HCL	3X40ML	VIAL	25CM20148	15:15	

COMMENTS: (QA/QC?)

Calibrated equip. prior to sampling activities

IDW INFORMATION:

PURGE WATER DUMPED ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-3

PROJECT: Seneca Army Depot - SEAD 25
LOCATION: Romulus, NY

DATE: 3/24/21
INSPECTORS: R. Inchima
PUMP #: 2288
SAMPLE ID #: 25SI20026

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0800	49°F	Rain	79%	8 mph	SSE	damp/wet	Horiba	PID
							Turbidimeter	Hach

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = {(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)}
1 well volume = 0.77 gal

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN ~~(TOC)~~	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	9.58'	4' bgs	2	N/A	N/A	N/A

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	4.83'	5.81'	~8.58'	0840

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	N/A	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND ~~mS/cm~~ (mmhos)	pH	ORP (mV)	TURBIDITY (NTU)
5	5.58	100	0.13	3.09	14.75	0.688	5.84	185	2.87
10	5.65	100	0.26	2.87	14.24	0.665	5.92	187	4.71
20	5.75	100	0.52	2.45	13.41	0.650	6.03	190	1.82
25	5.75	100	0.65	2.34	12.71	0.649	6.10	191	2.07
30	5.75	100	0.78	2.05	11.92	0.652	6.17	191	1.84
40	5.80	100	1.04	1.96	11.21	0.659	6.23	191	1.95
45	5.82	100	1.17	2.09	10.79	0.657	6.27	190	2.71
50	5.82	100	1.30	2.08	10.48	0.659	6.30	189	2.02
55	5.81	100	1.43	2.05	10.29	0.659	6.32	188	2.23
Post-sample -	5.76	100	2.0	1.51	9.47	0.646	6.40	185	1.84

MW25-3

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFAS, Mod 537 + 21 compounds			-	2/250 mL	HDPE	25ESI20026	0940	EJH/5-3-21

COMMENTS: (QA/QC?)

PID Headspace : 0.0 ppm

- Sampled w/ peri pump + HDPE tubing

Horiba calibrated prior to sampling. Turbidimeter Cal: 20 = 19.4 NTU; 100 = 100 NTU; 800 = 799 NTU; 10 NTU standard (passed) = 9.97 NTU

IDW INFORMATION:

- Waste water dumped on ground.
- PPE, tubing, solid waste in dumpster.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-6

PROJECT: Seneca Army
LOCATION: SEAD 25

DATE: 3/22/21
INSPECTORS: MA
PUMP #: A01769
SAMPLE ID #: 25ESI20027

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1350	63	Sunny	19	7	180	Dry

MONITORING INSTRUMENT	MONITORING DETECTOR
Hnu PID	Hach
	Horiba

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	14.0	4.3	6.8	NA	NA	NA
	PID READING (OPENING WELL)	**DEPTH TO STATIC WATER LEVEL (TOC)**		**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
DATA COLLECTED AT WELL SITE	0.0	4.7		5.0	13.0	1410
	PUMP PRIOR TO SAMPLING (cps)			**PUMP AFTER SAMPLING (cps)**		
RADIATION SCREENING DATA	NA				NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1445	4.9	100	.25	1.21	11.36	0.497	7.09	177	96.2
1420	4.9	100	.50	1.52	17.49	0.521	7.20	39	67.6
1425	4.9	100	.75	1.73	17.60	0.386	7.31	13	41.8
1430	4.9	100	1.00	1.69	17.60	0.389	7.29	10	29.2
1435	4.9	100	1.25	1.67	17.70	0.395	7.25	-6	20.1
1440	4.9	100	1.50	1.69	17.81	0.397	7.21	-7	19.2
1445	4.9	100	1.75	1.68	17.82	0.400	7.26	-6	15.2
1450	4.9	100	2.00	1.66	17.85	0.405	7.29	-4	10.31
1455	5.0	110	2.25	1.63	17.01	0.420	7.22	18	10.02
1500	5.0	100	2.50	1.60	16.65	0.430	7.22	34	9.70
1505	5.0	100	3.00	1.62	16.22	0.436	7.20	41	8.01
1510	5.0	100	3.50	1.64	16.01	0.442	7.20	47	7.33
1515	5.0	100	4.0	1.65	15.80	0.450	7.18	52	7.06
1520	5.0	100	4.50	1.66	15.86	0.457	7.20	52	6.03
1525	5.0	100	5.00	1.66	15.91	0.462	7.20	52	2.62
1530									
1535									
1540									
> Sample				1.72	16.11	0.431	7.20	42	11.2

MW25-6

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA + 21 PARAMETERS MeD #537			NONE	2/250	HDPE	25251200027	1535	MA 3/22/22 EDA 3-23-22

COMMENTS: (QA/QC?)

CALABRATED HORIBA, PID + Hach
USING Hach FOR TURBIDITY

IDW INFORMATION:

DUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-8

PROJECT: Seneca Army Depot - SEAD 25
LOCATION: Romulus, NY

DATE: 3/24/21
INSPECTORS: R. Inclima
PUMP #: 2288
SAMPLE ID #: 25ESI20028

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1023	48°F	Rain	92%	7 mph	SE	wet

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	PID
Turbidimeter	Hanna

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1 well volume = 0.43 gal

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN ~~(TOC)~~	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	5.18'	3.2' bgs	0.8'	N/A	N/A	N/A

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED (RT) WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	2.52'	3.03'	~ 5'	1045

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	N/A	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND mS/cm	pH	ORP (mV)	TURBIDITY (NTU)
10	3.07	100	~~0.43~~ 0.3	1.31	9.70	0.470	6.67	177	2.86
20	3.14	100	0.6	1.15	9.53	0.462	6.71	173	1.15
25	3.19	100	0.73	1.06	9.44	0.460	6.73	171	1.15
30	3.09	75	0.83	0.97	9.30	0.458	6.75	167	2.09
35	3.03	75	0.93	0.96	9.27	0.459	6.76	165	2.97
40	3.03	75	1.03	0.95	9.24	0.460	6.77	163	1.27
45	3.03	75	1.13	0.94	9.27	0.460	6.77	161	1.32
50	3.03	75	1.23	0.93	9.29	0.459	6.78	160	1.60
Post-sample -	3.02	75	1.4	1.91	9.67	0.453	6.84	157	1.59

MW25-8

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA, Mod 537, + 21 compounds			-	2/250mL	HDPE	25ESI20028	1140	KM/5-3-21

COMMENTS: (QA/QC?)

PID Headspace: 0.0 ppm

- sampled w/ peri pump + HDPE tubing

All equipment used was calibrated this morning (see MW25-3 sampling log comments)

IDW INFORMATION:

- Waste water dumped on ground.
- PPE, tubing, solid waste in dumpster.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-9

PROJECT: Seneca Army Depot - SEAD 25
LOCATION: Romulus, NY

DATE: 3/24/21
INSPECTORS: R. Inclima
PUMP #: 2288
SAMPLE ID #: 25ESI20029

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1207	51°F	Cloudy	94%	7 mph	S	wet

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	PID
Turbidimeter	Hach

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1 well volume = 0.52 gal

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (~~TOC~~)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	5.15'	3.2' bgs	0.8	N/A	N/A	N/A

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	1.97'	3.92'	~ 5-4.5'	1240

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	N/A	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND mS/cm(mmhos)	pH	ORP (mV)	TURBIDITY (NTU)
5	2.70	80	0.11	1.25	12.03	0.398	6.96	52	3.48
10	2.75	80	0.22	1.15	12.05	0.397	6.96	55	2.74
15	2.91	80	0.33	0.92	12.13	0.397	6.95	70	2.72
20	3.04	80	0.44	0.83	12.24	0.394	6.94	72	2.90
25	3.12	80	0.55	0.77	12.46	0.393	6.92	68	4.02
30	3.14	100	0.68	0.73	12.55	0.393	6.92	64	3.29
35	3.09	90	0.80	0.76	12.80	0.392	6.91	48	2.62
40	3.14	90	0.92	0.62	13.01	0.392	6.90	26	3.76
45	3.16	90	1.04	0.58	13.13	0.390	6.90	27	2.53
50	3.40	100	1.17	0.56	13.22	0.388	6.90	33	1.93
55	3.56	120	1.33	0.55	13.22	0.387	6.90	43	1.82
60	3.68	100	1.46	0.55	13.21	0.388	6.90	49	3.05
65	3.74	90	1.58	0.72	13.19	0.393	6.88	60	1.65
70	3.80	90	1.70	0.69	13.18	0.395	6.88	62	1.75
75	3.75	80	1.80	0.69	13.17	0.401	6.87	69	3.77
80	3.75	90	1.92	0.73	13.15	0.410	6.86	74	1.96
85	3.84	90	2.04	0.67	13.17	0.419	6.84	80	3.31
90	3.88	90	2.16	0.67	13.18	0.420	6.84	83	1.74
95	3.92	90	2.28	0.65	13.18	0.422	6.84	85	2.53
Post-sampling –	3.08	90	2.4	0.71	13.18	0.431	6.82	90	1.98

MW25-9

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA, Mod 537, + 21 compounds			-	2 / 250 mL	HDPE	25ES120029	1420	EGA/6-3-21

COMMENTS: (QA/QC?)

PID Headspace: 0.0 ppm

- Sampled w/ peri pump + HDPE tubing
- after the 25 minute mark, the peri pump kept stalling intermittently; had to constantly raise + lower the setting to avoid stalling and avoid water level dropping too much
  - stalling on low setting due to low battery; 1316: changed battery; able to keep steady low rate with new battery (?)
- after 45 minute mark, spare battery began failing
  1344: changed battery again (Ed had spare in UTV)

All equipment calibrated this morning. (see MW25-3 sampling log comments)

IDW INFORMATION:

- Waste water dumped on ground.
- PPE, tubing, solid waste in dumpster.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-10
PROJECT: Seneca Army Depot		DATE: 3/25/21
LOCATION: SEAD 25		INSPECTORS: MA
		PUMP #: A01769
		SAMPLE ID #: 25ES120030

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0818	56	Sunny	82	7	180	MOIST

MONITORING	
INSTRUMENT	DETECTOR
HORIBA	HACH
PID	rae

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	6.2	3.2	2	NA	NA	NA
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	3.1		5.7	5	0830
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)		
	NA				NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0835	5.6	100	.10	8.85	12.03	0.355	7.86	142	12.9
0840	44	75	.20	6.61	10.11	0.361	7.61	130	11.2
0845	4.5	75	.30	4.86	9.94	0.370	7.47	156	7.66
0850	4.7	75	.40	3.55	9.51	0.375	7.28	160	5.03
0855	4.8	75	.50	3.17	9.89	0.381	7.19	162	2.82
0900	5.2	75	.60	2.80	9.16	0.393	7.12	121	3.16
0905	5.4	75	.75	2.66	9.04	0.400	7.05	111	3.92
0910	5.6	75	.85	2.39	8.96	0.405	7.04	106	4.18
0915	5.6	75	1.00	2.21	9.16	0.408	7.09	81	5.90
0920	5.6	75	1.15	2.96	9.32	0.410	7.12	66	6.54
0925	5.6	75	1.30	3.52	9.59	0.411	7.15	60	7.30
930	5.6	75	1.50	3.90	9.65	0.411	7.16	57	7.40
935	5.6	75	1.70	3.20	9.65	0.401	7.20	50	7.39
940	5.7	75	1.90	2.94	9.65	0.386	7.23	50	7.34
945	5.7	75	2.10	2.94	9.80	0.386	7.23	52	7.01
950	5.7	75	2.25	2.94	10.20	0.386	7.23	52	6.88
955									
1000									
> Sample			2.60	2.94	11.05	0.386	7.29	94	9.21

MW25-10

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA + 21 PARAM MOD 537			NONE	2/250	HDPE	25E5I20136	0956	MM 3/4/21

EDM 5-5-21

COMMENTS: (QA/QC?)

HORIBA, PID + HACH CALIBRATED

USING HACH FOR TURBIDITY

IDW INFORMATION:

DUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-15

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 7/24/2024
INSPECTORS: DPC
PUMP #: —
SAMPLE ID #: 25BSS20032

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
08:10:25	50	RAIN, CLOUDY	HIGH	0	NA	WET	HORIBA U-52	pH
							SKINNY DIPPER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
0.5C

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	6.95	3.9	1.5	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	3.30	6.95	5	10:25

	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
RADIATION SCREENING DATA	—	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10:25	3.30	200	0.0	8.68	8.42	0.460	7.06	149	45.0
10:35	5.40	150	0.2	9.58	7.76	0.452	6.85	149	5.43
10:45	5.95	150	0.4	8.05	7.87	0.474	6.80	147	5.78
10:55	6.16	100	0.6	8.28	8.06	0.474	6.79	144	3.24
11:00	6.26	100	0.8	9.24	8.06	0.474	6.78	144	2.81
11:05	6.40	100	0.8	9.21	8.07	0.468	6.78	143	3.06
11:10	6.50	100	0.9	9.12	8.06	0.466	6.76	141	2.58
11:15	6.64	100	1.1	9.00	8.13	0.457	6.76	140	3.35
11:20	6.81	100	1.2	8.91	8.21	0.458	6.75	138	3.29
11:25	6.95	DRY							
11:50	3.15	100		6.55	17.96	0.408	7.27	70	5.90

MW 25-15

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA 21 PARAMETER MOD 537			N/A	2X250mL	HDPE	25ESI20032	12:50	EDA / 5-3-21

COMMENTS: (QA/QC?)

FB SEDA PFAS 01006 COLLECTED @ 12:50

Equip. Cal. Prior to sampling.

IDW INFORMATION:

PURGE WATER DUMPED ON THE GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-17

PROJECT: Seneca Army
LOCATION: SEAD - 25

DATE: 3/23/21
INSPECTORS: MA
PUMP #: A01769
SAMPLE ID #: 25SD200323

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0842	43	Sunny	52	7	180	Dry

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	Hach
PID	Heron

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	11.05	4.6	5	NA	NA	NA
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	3.5		5.3	9.0	0855
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	NA		PUMP AFTER SAMPLING (cps)	NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0900	4.6	200	.25	15.96	7.02	0.618	7.16	82	59.9
0905	4.7	100	.40	6.79	6.99	0.619	7.16	91	42.8
0910	4.9	160	.60	6.72	6.98	0.619	7.08	94	30.6
0915	4.9	100	.90	5.88	7.12	0.618	7.08	100	21.0
0921	5.0	100	1.20	5.72	7.26	0.617	7.08	104	8.47
0925	5.0	100	1.40	5.67	7.31	0.616	7.07	107	5.21
0930	5.1	100	1.70	5.51	7.42	0.616	7.08	110	2.11
0935	5.1	100	2.00	5.38	7.61	0.617	7.08	112	1.06
0940	5.2	100	2.30	5.23	7.76	0.617	7.09	114	1.23
0945	5.2	100	2.50	5.16	7.98	0.617	7.09	117	1.21
0950	5.3	100	2.80	5.11	7.99	0.618	7.10	120	1.86
0955	5.2	100	3.00	5.07	8.02	0.618	7.11	124	1.51
1000	5.3	100	3.20	5.05	8.31	0.619	7.11	128	1.63
1005									
1010									
1015									
→	SAMPLE			5.43	8.90	0.615	7.13	122	0.0

MW 25-17

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	HPDA + 21 PARAMETERS MCD 537			NONE	2/250	HDPE	25ESI20833	1010	MH 3/23/21

EOM 3-23-21

COMMENTS: (QA/QC?)

HORIBA, PID, + Hach CALIBRATED

USING Hach FOR TURBIDITY

IDW INFORMATION:

WATER PURGED ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-18

PROJECT: Seneca Army
LOCATION: SEAD 25

DATE: 3/23/21
INSPECTORS: MH
PUMP #: A01769
SAMPLE ID #: 25ESI220034

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1031	55	Sunny	34	9	182	Dry	HORIBA	Hach
							PID	fm

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]: 4.5

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	10.9	~~4.4~~	~~4.5~~	—	—	—
	PID READING (OPENING WELL)	**DEPTH TO STATIC WATER LEVEL (TOC)**	**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**	
DATA COLLECTED AT WELL SITE	0.1	5.2	6.9	8.9	1100	
	PUMP PRIOR TO SAMPLING (cps)		**PUMP AFTER SAMPLING (cps)**			
RADIATION SCREENING DATA	—		—			

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1105	6.2	250	.50	4.93	12.41	0.593	7.12	124	59.6
1110	6.3	100	.60	4.69	12.45	0.596	7.11	115	28.2
1115	6.4	100	.75	4.17	1245	0.600	7.10	+27	10.9
1120	6.5	100	1.00	4.02	1250	0.604	7.09	+27	4.21
1125	6.5	100	1.25	3.86	12.58	0.611	7.09	+27	2.43
1130	6.6	100	1.50	3.86	12.58	0.612	7.09	131	2.12
1135	6.7	100	1.70	3.86	1259	0.613	7.09	132	1.64
1140	6.9	100	1.90	3.86	12.59	0.614	7.08	132	1.03
1145									
1150									
1155									
1200				EOM					
>	Sample			3.86	1258	0.611	7.09	132	2.4

MW 25-18

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
	PFOA + 21 PFCs MOD 537	CRS		None	2/250	~~PIPE~~	25ES-F200[illegible] ~~HDPE~~	1150	MA 3/23/21 EOH 3-29-21

COMMENTS: (QA/QC?)

HORIBA, PID, Hach CALABRATED

Hach USED FOR TURBIDITY

TRIMMED BRUSH AROUND WELL

IDW INFORMATION:

DUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER MW25-19

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-19

PROJECT: Seneca Army
LOCATION: SEAD 25

DATE: 3/23/21
INSPECTORS: MM
PUMP #: A01769
SAMPLE ID #: 25MW20035

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1502	66	Sunny	21	9	180	DRY	HORIBA	H2OH
							PID	Air

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	11.75	5.3	4.5	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	3.8	4	—	1510

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1515	4.0	150	.20	3.79	19.96	0.448	8.20	126	11.59
1520	4.0	100	.40	2.58	19.83	0.460	7.38	136	7.60
1525	4.0	100	.60	2.33	19.26	0.461	7.36	137	2.47
1530	4.0	100	.80	2.16	18.91	0.461	7.34	138	2.03
1535	4.0	100	1.00	2.01	18.62	0.461	7.32	139	2.00
1540	4.0	100	1.25	1.93	18.12	0.466	7.28	138	2.25
1545	4.0	100	1.50	1.98	17.73	0.467	7.26	137	1.24
1550	4.0	100	1.75	1.96	17.70	0.469	7.25	138	1.21
1555	4.0	100	2.00	1.93	17.66	0.470	7.23	139	1.39
1600	4.0	100	2.25	1.91	17.61	0.476	7.22	139	0.66
1605									
1610									
1615									
1621									
>	SAMPLE			3.30	17.75	0.474	7.44	138	

MW25-19 EOM 3-29

SAMPLING ORDER		PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
				COUNT/ VOLUME	TYPE			
	PFOA + 21 PARAMETERS MOD 537		NONE	3/250	HDPE	25E5E20035	1605	MA 3/23/2

COMMENTS: (QA/QC?)

- HORIBA, PID, HEAH CALIBRATED
- TRIMMED BRUSH AROUND WELL
- USING HOAH FOR TURBIDITY MEASUREMENT

IDW INFORMATION:

DUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 25-20

PROJECT: SEDA
LOCATION: SEAD 25-20

DATE: 5/28/19
INSPECTORS: -
PUMP #: -
SAMPLE ID #: 25ES12000?

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
	62°	Partly cloudy	83	12	45	wet	Horiba-U52	PH and turb

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	0~~0~~ 4.16'	0.0'	8'10	133	7.41	0.819

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	-	5.25	5.61	11.97	-

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
5	5.91	175	0.25		12.99	0.706	6.77		298
10	6.12	400	0.50		11.19	0.700	6.67	162	696
15	6.25	350	1.25		10.79	0.709	6.58	174	441
20	6.20	375	2.0		11.26	0.704	6.56		426
25	6.26	375	2.50		10.67	0.709	6.53	182	220
30	6.26	375	2.75		10.55	0.709	6.52	185	176
35	6.26	375	3.50		10.44	0.710	6.50		124
40	6.28	375	4.25		10.52	0.712	6.48	194	81.9
45	6.28	375	4.75		10.67	0.712	6.46	197	59.6
50	6.21	375	5		10.64	0.709	6.42	202	36.9
55	6.29	375	5.5		10.64	0.710	6.41	204	103
60	6.29	355	6		10.43	0.710	6.42	205	25.9
65	6.32	375	6.5		10.36	0.710	6.40	207	0.0

* Used a development log accidently. transferred numbers over on 5/30. DO was not collected

25-20

SAMPLING ORDER		PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE	
	1		None	2	PFAS	25ES120001	1645	5/28/19	A. Cou
	2		None	2	PFAS	25ES120002	1650	5/28/19	A. Cou

COMMENTS: (QA/QC?)

Field Dupe collected here. Was originally written on a well development log. DO was not recorded for this reason, along with missing ORP data.

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 25-20

PROJECT: Seneca Army
LOCATION: SEAD 25

DATE: 9/23/21
INSPECTORS: MH
PUMP #: A01769
SAMPLE ID #: 25MW2003

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1205	61	Sunny	28	8	180	DRY	HORIBA	Hach
							PID	Rae

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.165	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(TOW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	13.65	4.25	10	-	-	-

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	4.0	4.3	11.65	1225

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		-		-

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1230	4.10	100	.10	2.76	1822	0.731	7.38	162	296
1235	4.20	100	.20	2.39	1515	0.749	7.09	126	161
1240	4.20	100	.30	1.98	1357	0.764	6.91	132	89.2
1245	4.20	100	.40	1.95	1368	0.762	6.91	133	71.6
1250	4.20	100	.60	1.89	1365	0.760	6.91	136	52.7
1255	4.20	100	.80	1.84	1367	0.759	6.91	138	45.1
1300	4.30	100	1.00	1.80	1371	0.757	6.92	140	38.6
1310	4.30	100	1.25	1.78	1386	0.755	6.94	141	24.4
1315	4.30	100	1.40	1.75	1392	0.750	6.95	142	24.2
1320	4.30	100	1.70	1.73	1401	0.746	6.96	143	13.91
1325	4.30	100	2.00	1.73	1426	0.744	6.96	145	9.45
1330	4.30	100	2.25	1.73	1420	0.746	6.96	146	8.91
1335	4.30	100	2.50	1.72	1413	0.748	6.97	147	8.56
1340	4.30	100	2.75	1.72	1412	0.750	6.97	147	8.28
1345	4.30	100	3.01	1.71	1429	0.750	6.97	148	8.11
1350	4.30	100	3.25	1.68	1436	0.746	6.97	149	7.29
1355	4.30	100	3.50	1.66	1447	0.742	6.97	150	5.93
1400	4.30	101	3.70	1.66	1430	0.743	6.97	150	5.12
DUP				1.41		0.729	6.98	143	8.26

MW 25-20

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA +21 PARAMETERS MOD 537			NONE	2/250	HDPE	25ESE20086	1405	MW 3/23/21

EDA / ~~3-24-21~~ 3-29-21

COMMENTS: (QA/QC?)

HORIBA, PID, HACH CALIBRATED

HACH USED TO TEST TURBIDITY

IDW INFORMATION:

WATER DUMPED ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 25-21

PROJECT: SEDA
LOCATION: SEAD25 25-21

DATE: 5/31/19
INSPECTORS:
PUMP #: 04 2484
SAMPLE ID #: 25ES12402

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0955	60	Sunny	76	3	S180	Dry muddy	Horiba U52	pH, cond, DO etc

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	~~20~~ 5'	0'		>1000	7.49	0.783
	PID READING (OPENING WELL)	**DEPTH TO STATIC WATER LEVEL (TOC)**	**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
DATA COLLECTED AT WELL SITE	-	2.31' 2.45	Bottom	6.75'	0955
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	8.81'	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	4.81'	250	-	4.06	12.00	0.688	7.03	153	71.8
5	5.70	230	0.25	2.63	11.48	0.673	6.86	154	85.8
10	6.74'	300	0.30	2.23	12.17	0.645	6.77	159	945
15	7.05'	300	0.35	3.23	13.31	0.662	6.77	152	>1000
Pump Dies - Try again @ 1640									
0	4.14	250	-	4.91	10.57	0.654	4.98	35	155
~~5~~	~~4.09~~ 4.19	250	.25	4.91	10.03	0.642	4.70	92	126
		water level dropping turbidity does not stabilize* ~~decided~~ PC							
		decided to sample before it was dry						1000 or dry.	

25-21

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	none	2	PPAS	25ES120002	1700	5/31/19 A Loom

COMMENTS: (QA/QC?)

Water level is not stable / does not recharge at this well, decided to sample before turbidity stabilized so turbidity did not spike / well did not run dry.

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-21

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 3/24/2021
INSPECTORS: OC
PUMP #: —
SAMPLE ID #: 25SI2-0037

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
15:05	50	OVERCAST/WIND	HIGH	+10	180	WET/MUD

MONITORING INSTRUMENT	MONITORING DETECTOR
HORIBA U-52	PUMP
SKLUMPY DIPPER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	8.69	5	5	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	0.75	4.09	8	15:05

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
15:05	0.75	150	0.0	0.45	13.12	0.757	7.09	45	3.9
15:15	2.00	150	0.4	0.34	12.12	0.773	6.90	-32	10.2
15:20	2.5	100	0.6	0.51	11.51	0.775	6.87	-34	8.93
15:25	3.0	100	0.7	0.56	10.88	0.779	6.85	-35	11.0
15:30	3.16	100	0.8	0.58	10.92	0.781	6.84	-38	10.2
15:35	3.23	100	0.9	0.60	10.97	0.784	6.83	-41	9.63
15:40	3.47	100	1.0	0.64	11.04	0.787	6.82	-44	8.42
15:45	3.55	100	1.1	0.82	11.02	0.778	6.82	-47	16.7
15:50	3.75	100	1.2	0.99	11.00	0.769	6.82	-50	24.2
16:10	3.94	100	1.6	0.61	11.28	0.801	6.80	-77	12.2
16:15	3.94	100	1.7	0.51	11.36	0.805	6.80	-80	11.9
16:20	3.95	100	1.8	0.42	11.44	0.809	6.74	-84	11.5
16:25	3.97	100	1.9	0.45	11.39	0.809	6.74	-86	11.6
16:30	4.00	100	2.0	0.47	11.23	0.810	6.74	-89	11.7
16:35	4.03	100	2.1	0.43	11.27	0.811	6.79	-90	11.1
16:40	4.07	100	2.2	0.47	11.32	0.812	6.74	-91	10.5
16:45	4.09	100	2.3	0.40	11.39	0.813	6.74	-93	9.98
16:55	8.10	100	2.5	0.64	11.20	0.769	6.88	-73	12.6

MW25-21

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA 21 PARAMETER 1000 537			NA	2x250mL	HDPE	25ESI260178	16:45	EDA/5-5-21

COMMENTS: (QA/QC?)

- EB COLLECTED

- Equip. Cal. prior to sampling.

IDW INFORMATION:

PURGE WATER POURED ON THE GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 125-22

PROJECT: SEDA
LOCATION: SEAD 25-22

DATE: 5/29/08
INSPECTORS: -
PUMP #: 042340
SAMPLE ID #: 25ES120003

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1330	54	Rain, cloudy	87	3	112	Wet

MONITORING	
INSTRUMENT	DETECTOR
Horiba U-52	pH, Orp, turb. ect

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	~~14.5'~~	0'	5'	4.7	7.30	0.774

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	-	0.0	0.7	12.12	~~1340~~ 1340

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	0.0	500	-	3.31	10.83	0.685	6.86	104	0.0
5	0.5	450	0.5g	1.16	10.63	0.673	6.86	104	0.0
10	0.6	450	1g	0.56	10.45	0.673	6.72	56	0.0
15	0.6	450	1.75g	0.11	10.48	0.671	6.65	42	0.0
20	0.5	450	2.50g	0.09	10.68	0.669	6.64	40	0.0
25	0.5	450	3.00g	0.08	10.70	0.671	6.62	39	0.0
30	0.48	450	3.50g	0.00	10.69	0.672	6.61	37	0.0
35	0.5	3750	3.75g	0.00	10.80	0.672	6.60	36	0.0
40	0.4	325	4.25g	0.00	10.91	0.672	6.59	35	0.0
45	0.4	200	4.75g	0.00	11.19	0.673	6.59	35	0.0
50	0.7	500	5.25g	0.05	10.48	0.684	6.58	35	0.0
55	0.7	500	5.75g	0.00	10.17	0.677	6.57	33	0.0
60	0.7	500	~~6~~ 6.00g	0.00	10.11	0.677	6.57	30	0.0

Bottom of Dying

SAMPLING ORDER	PRESERVATIVES	BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE	
		COUNT VOLUME	TYPE				
	PFAS	2	PFAS	25ES120003	1500	5/29/19	A. Cook
	PFAS	2	PFAS	25ES120003MS	1505	5/29/19	A. Cook
	PFAS	2	PFAS	25ES120003MSD	1510	5/29/19	A. Cook

COMMENTS: (QA/QC?)

MS/MSD Collected here

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 25-22

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 3/24/2021
INSPECTORS: DR
PUMP #: —
SAMPLE ID #: 25ESI2C078

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
11:50	50	OVERCAST, RAIN	HIGH	0	NA	WET/MUD	HORIBA U-52	pH
							SKINNY DIPPER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	14.35	~~4.5~~	~~10~~	—	—	—

DATA COLLECTED AT WELL SITE:	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	0.0	0.20	13	11:52

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	—	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
11:50	0.0	150	0.0	0.79	9.92	0.734	6.59	113	702
12:00	0.20	150	0.7	0.32	9.39	0.736	6.64	58	105
12:10	0.20	150	0.9	0.33	9.74	0.724	6.64	51	8.82
12:20	0.20	150	1.3	0.32	9.71	0.720	6.64	48	7.33
12:25	0.20	150	1.5	0.30	9.69	0.718	6.64	43	5.46
12:30	0.20	150	1.7	0.30	9.78	0.720	6.64	40	5.20
12:35	0.20	150	1.9	0.29	9.87	0.721	6.64	36	5.06
12:40	0.20	150	2.1	0.30	10.00	0.720	6.64	33	2.89
12:45	0.20	150	2.3	0.32	10.14	0.719	6.64	30	2.34
12:50	0.20	150	2.5	0.32	10.11	0.719	6.64	27	2.85
12:55	0.20	150	2.8	0.31	10.08	0.720	6.64	24	2.90
13:00	0.20	150	3.0	0.31	10.10	0.718	6.64	23	2.98
13:05	0.20	150	3.2	0.31	10.12	0.716	6.65	22	3.04
13:15	0.20	150	3.6	0.32	10.22	0.717	6.78	63	~~14.75~~ 8.66

MW 25-22

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA 21 PARAMETER MOD 537			NA	2X250mL	HDPE	25ESI200[illegible]	1305	EDA/5-5-21

COMMENTS: (QA/QC?)

FB SEDA PFAS 0005 COLLECTED HERE

Equip. Cal. prior to sampling.

IDW INFORMATION:

PURGE WATER DUMPED ON THE GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-22D

PROJECT: SEAD
LOCATION: ~~AREA 25~~ SEAD

DATE: 8/19/2020
INSPECTORS: DAN CHAMBERLAND
PUMP #: 047622
SAMPLE ID #: 25ESI2015

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
09:00	75	PARTLY CLOUDY	LOW	10	270	DRY	18358	21172
							044691	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	[illegible]	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

marcom, Horiba

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	49	39	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	2.30	23.55	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
09:00	2.30	200	0	2.92	17.94	0.622	6.18	109	101
09:10	4.46	200	0.5	2.02	18.42	0.542	7.36	72	100
09:20	6.58	200	1.0	1.69	18.27	0.539	7.57	56	78.6
09:30	8.55	200	1.5	1.12	17.95	0.523	7.60	46	62.7
09:40	9.57	200	2.0	1.01	17.95	0.524	7.62	40	62.7
09:50	10.70	200	2.4	0.89	17.71	0.516	7.62	30	62.8
10:00	12.78	180	2.7	0.82	17.38	0.527	7.61	4	55.5
10:10	14.90	180	3.1	0.52	18.07	0.493	7.59	-1	50.4
10:20	15.64	200	3.4	0.56	16.94	0.522	7.55	-3	78.4
10:30	16.62	200	3.9	0.32	17.23	0.522	7.58	-27	72.7
10:40	20.42	200	4.4	0.72	19.62	0.517	7.54	-2	68.4
10:50	20.58	180	5.0	0.22	16.92	0.507	7.61	-34	54.2
11:00	21.09	180	5.5	0.29	16.56	0.516	7.57	-53	67.4
11:10	21.48	190	5.9	0.27	16.47	0.513	7.56	-62	60.9
11:20	22.10	180	6.2	0.26	16.73	0.517	7.58	-70	63.6
11:30	22.21	200	6.6	0.29	16.12	0.503	7.55	-75	58.9
11:40	23.51	190	7.0	0.22	16.51	0.504	7.57	-75	55.6
11:50	23.64	180	7.4	0.20	17.00	0.515	7.60	-76	53.2
12:00	23.78	180	7.8	0.14	17.45	0.516	7.62	-80	49.1
12:10	23.95	180	8.2	0.21	17.61	0.507	7.61	-88	49.6
12:15	23.52	180	8.4	0.20	17.71	0.505	7.62	-89	48.7
12:20	23.53	180	8.6	0.22	17.74	0.509	7.62	-90	49.1
12:25	23.55	180	8.8	0.20	17.67	0.513	7.67	-92	47.5

MW25-22D

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA,			NA	2x250mL	PLASTIC	+	12:25	8/19/2020 EDH
	Mod 537,						25ESI 20015		
	21 comp.								

COMMENTS: (QA/QC?)

SAMPLE ID: 25ESI20015

-HDPE: Silicon tubing used

IDW INFORMATION:

-IDW in dumpster: GW on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY | PARSONS | WELL #: MW25-22D

PROJECT: SENECA army DEPOT
LOCATION: SEAD 25

DATE: 3/29/2021
INSPECTORS: DJC
PUMP #: 24734
SAMPLE ID #: 25ESL2003

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM) VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS
08:50	30	OVERCAST	~~LOW~~ HIGH	15	270	WET/MUD

MONITORING

INSTRUMENT	DETECTOR
SKC UNV PUMP	Manson
HORIBA U-52	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - (STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]: 8.05

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	50.75	39	to	—	—	—
DATA COLLECTED AT WELL SITE	**PID READING (OPENING WELL)**	**DEPTH TO STATIC WATER LEVEL (TOC)**		**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
	—	0.40		22.50	45.00	08:50
RADIATION SCREENING DATA	**PUMP PRIOR TO SAMPLING (cps)**	—		**PUMP AFTER SAMPLING (cps)**	—	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
08:50	0.40	150	0.0	2.36	9.64	0.589	5.97	169	130
09:00	2.69	200	0.4	1.09	7.75	0.588	7.53	115	812
09:10	3.70	200	0.9	0.81	7.08	0.580	7.94	91	503
09:20	3.84	200	1.4	0.82	6.64	0.593	7.99	84	526
09:25	4.61	200	1.6	0.68	7.02	0.595	8.04	78	459
09:30	5.48	200	1.9	0.57	7.63	0.597	8.11	71	373
09:35	6.21	200	2.1	0.53	8.01	0.597	8.12	62	341
09:40	6.98	200	2.4	0.49	8.16	0.597	8.14	55	312
09:45	7.78	200	2.6	0.44	8.38	0.595	8.15	55	289
09:50	8.25	200	2.9	0.49	8.28	0.593	8.16	46	267
09:55	9.02	200	3.2	0.48	8.51	0.594	8.17	40	229
10:00	9.76	200	3.4	0.47	8.77	0.595	8.19	34	216
10:15	9.99	200	3.6	0.47	8.74	0.592	8.19	30	188
10:10	10.77	200	3.8	0.48	8.71	0.590	8.19	24	164
10:15	11.20	200	4.0	0.46	8.92	0.590	8.19	18	160
10:20	11.61	200	4.3	0.44	9.28	0.590	8.14	13	156
10:25	12.58	200	4.5	0.46	9.51	0.587	8.20	6	128
10:30	13.50	200	4.7	0.48	9.73	0.585	8.22	-5	104
10:35	14.40	200	5.0	0.46	10.21	0.580	8.20	-10	101
10:40	15.36	200	5.2	0.44	10.59	0.582	8.23	-17	102
10:45	16.61	200	5.4	0.47	11.11	0.589	8.22	-19	102

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-22D

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 3/29/2011
INSPECTORS: DPC
PUMP #: 24734
SAMPLE ID #: 25ESE20079

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM) VELOCITY (APPRX)	WIND (FROM) DIRECTION (0–360)	GROUND / SITE SURFACE CONDITIONS
11:00	90	OVERCAST, WINDY	MED	15	270	WET/MUD

MONITORING

INSTRUMENT	DETECTOR
HORIBA U-52	manson
SKINNY DIPPER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.165	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(TOW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]: 8.05

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	50.75	39	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	0.40	22.8	45.00	08:50

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	—			—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10:50	17.15	200	5.6	0.46	10.99	0.581	8.22	-21	102
10:55	17.71	200	5.9	0.45	11.02	0.581	8.22	-28	101
11:00	17.89	200	6.1	0.45	11.14	0.580	8.23	-31	101
11:05	18.46	200	6.7	0.44	11.28	0.579	8.23	-35	94.7
11:10	18.87	200	6.5	0.47	11.16	0.578	8.23	-39	91.6
11:15	19.02	200	6.8	0.42	11.35	0.579	8.24	-42	89.3
11:20	19.14	200	7.0	0.43	11.41	0.577	8.24	-46	88.4
11:25	19.29	200	7.2	0.43	11.48	0.577	8.24	-50	87.6
11:30	19.39	200	7.4	0.43	11.77	0.576	8.24	-53	88.7
11:35	19.89	200	7.6	0.48	11.41	0.576	8.24	-56	89.1
11:40	20.26	200	7.8	0.43	11.58	0.576	8.24	-59	91.7
11:45	20.61	200	8.1	0.42	11.74	0.575	8.24	-62	92.0
11:50	21.01	200	8.3	0.42	11.80	0.575	8.24	-65	94.8
11:55	21.28	200	8.5	0.41	11.88	0.574	8.24	-68	91.1
12:00	21.57	200	~~0.4~~ 8.8	0.41	11.92	0.574	8.24	-74	92.3
12:05	22.14	200	9.0	0.40	12.03	0.576	8.24	-76	97.2
12:10	22.68	200	9.3	0.39	12.12	0.577	8.23	-78	100
12:15	22.79	200	9.5	0.38	12.18	0.577	8.23	-80	95.4
12:20	22.97	200	9.7	0.38	12.23	0.578	8.24	-81	91.0
12:25	23.48	200	9.9	0.37	12.28	0.576	8.24	-81	98.3
12:30	23.74	200	10.2	0.37	12.32	0.575	8.24	-82	106

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-220

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 3/24/2021
INSPECTORS: DFC
PUMP #: 24739
SAMPLE ID #: 25ESI20039

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS
12:40	45	OVERCAST	MED	10	180	WET/MUD

MONITORING INSTRUMENT	MONITORING DETECTOR
SKINNY DIPPER	MANSCAN
HORIBA U-52	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
8.05

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	50.75	39	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	0.40	22.50	45.00	08:50

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	—			—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
12:35	29.28	200	10.9	0.36	12.39	0.576	8.24	-82	101
12:40	29.61	200	10.6	0.36	12.53	0.577	8.24	-85	
12:45	29.51	200	10.8	0.37	12.49	0.573	8.24	-86	
12:50	26.90	200	11.0	0.38	12.42	0.574	8.23	-87	88.5
12:55	26.70	200	11.3	0.37	12.51	0.574	8.23	-87	91.7
13:00	26.86	200	11.5	0.37	12.60	0.574	8.22	-87	95.9
13:05	27.51	200	11.8	0.37	12.74	0.574	8.23	-88	99.8
13:10	29.65	200	12.0	0.37	12.89	0.573	8.23	-88	104
13:15	28.91	200	12.2	0.37	12.93	0.571	8.23	-88	116
13:20	29.13	200	12.5	0.37	12.98	0.569	8.23	-88	123
13:25	29.37	200	12.7	0.36	12.63	0.569	8.23	-88	120
13:30	29.61	200	12.9	0.35	12.81	0.568	8.22	-87	116
13:35	29.80	200	13.1	0.34	13.07	0.567	8.22	-86	113
13:40	29.86	200	13.3	0.33	13.06	0.567	8.22	-87	114
13:45	29.92	200	13.6	0.32	13.01	0.567	8.22	-89	115
13:50	30.20	200	13.8	0.32	13.16	0.567	8.22	-90	117
13:55	30.18	200	14.0	0.31	13.12	0.566	8.22	-91	120
14:00	30.39	200	14.3	0.31	13.45	0.566	8.22	-91	118
14:05	30.21	200	14.5	0.32	13.29	0.565	8.21	-91	115
14:10	30.13	200	14.7	0.32	13.14	0.565	8.20	-92	119
14:15	30.06	200	15.0	0.31	13.04	0.565	8.19	-91	113

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-220

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 3/29/2021
INSPECTORS: DPC
PUMP #: 24739
SAMPLE ID #: 25ESI20034

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM) VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS
14:20	50	PARTLY CLOUDY	MED	10	235	WET/MUD

MONITORING

INSTRUMENT	DETECTOR
HORIBA U-52	MINSONDE
SKINNY DIPPER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.75	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.165	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(TOW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
8.05

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	50.75	39	TO	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	0.40	22.9	45.0	08:50

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
14:20	30.50	200	15.3	0.30	13.31	0.567	8.20	-92	104
14:25	31.70	200	15.6	0.30	13.45	0.567	8.20	-93	101
14:30	32.2	200	15.9	0.30	13.65	0.566	8.14	-94	99.9
14:35	32.17	200	16.0	0.30	13.78	0.566	8.14	-95	99.6
14:40	32.35	200	16.2	0.30	13.69	0.563	8.19	-94	102
14:45	32.36	200	16.6	0.31	13.60	0.560	8.18	-93	103
14:50	32.16	200	16.7	0.32	13.55	0.559	8.18	-92	104
~~14:~~			~~16.9~~	~~0.31~~	~~13.31~~	~~0.554~~	~~8.14~~	~~-91~~	~~101~~
14:55	32.36	200	17.1	0.30	13.22	0.555	8.19	-90	99.7
15:00	32.95	180	17.3	0.30	12.99	0.560	8.19	-90	102
15:05	32.65	180	17.5	0.30	12.84	0.562	8.19	-89	104
15:15	32.71	180	17.7	0.30	12.96	0.562	8.18	-88	103
15:25	32.82	180	18.0	0.29	13.12	0.561	8.17	-88	101
15:30	32.85	180	18.2	0.29	13.07	0.561	8.17	-87	96.2
15:35	32.90	180	18.4	0.29	13.02	0.561	8.16	-87	94.4
15:40	33.40	180	18.6	0.28	12.88	0.560	8.15	-86	92.7
15:45	32.87	180	18.9	0.29	12.80	0.560	8.14	-86	94.8
15:50	32.85	180	19.1	0.24	12.75	0.559	8.13	-85	101
15:55	32.85	180	19.3	0.28	12.70	0.559	8.12	-84	110
16:00	32.91	180	19.6	0.28	12.51	0.563	8.11	-84	121
16:05	32.75	180	19.9	0.28	12.74	0.566	8.10	-83	157

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-22D

PROJECT: SENECA army DEPOT
LOCATION: SEAD 25

DATE: 3/29/2021
INSPECTORS: DPC
PUMP #: 24739
SAMPLE ID #: 25ESI20039

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
08:30	50	CLEAR SKY	Low	15	200	WET/MUD	HORIBA U-52	manson
							SKINNY DIPPER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
8.05

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	50.75	39	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	0.40	22.50	45.0	08:10

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	—	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
16:10	37.40	180	15.0	0.28	12.37	0.566	8.10	-84	197
16:15	37.61	180	15.3	0.27	12.35	0.565	8.10	-85	155
16:20	37.58	180	15.6	0.27	12.32	0.565	8.11	-86	152
16:30	37.51	180	16.1	0.27	12.28	0.568	8.10	-86	146
16:40	37.23	180	16.6	0.27	12.37	0.568	8.10	-88	
16:45	37.62	180	16.8	0.27	12.42	0.569	8.11	-92	
3/30/21									
08:10	1.98	200	16.8	1.20	9.94	0.701	6.85	139	144
08:20	6.92	200	17.2	0.40	9.67	0.667	7.72	106	82.4
08:30	7.96	200	17.6	0.46	9.54	0.659	7.88	86	77.7
08:40	8.82	200	18.1	1.52	9.68	0.660	7.97	74	71.7
08:45	9.18	200	18.3	1.02	10.01	0.660	7.99	65	65.3
08:50	11.62	200	18.5	0.50	10.46	0.659	8.02	56	60.6
09:55	12.19	180	18.7	0.49	10.57	0.658	8.02	53	61.4
09:00	12.87	180	18.9	0.48	10.68	0.657	8.02	49	62.9
09:05	13.51	180	19.1	0.43	10.78	0.657	8.03	44	59.1
09:10	13.93	180	19.4	0.40	10.84	0.656	8.04	39	56.5
09:15	14.31	180	19.6	0.40	11.00	0.656	8.04	34	54.9
09:20	14.85	180	19.9	0.41	11.29	0.656	8.03	26	53.8
09:25	14.92	180	20.1	0.43	11.41	0.654	8.03	24	50.9
09:30	15.00	180	20.3	0.46	11.62	0.652	8.03	22	49.1

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-220

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 3/30/2021
INSPECTORS: DPC
PUMP #: 24739
SAMPLE ID #: 25ES220039

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
10:15	55	CLEAR, WINDY	LOW	20	200	WET/MUD	HORIBA U-52	Manson
							SKINNY DIPPER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
8.05

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	50.75	39	10	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	0.40	32.0	45.0	08:10

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10:05	15.51	170	21.8	0.53	12.79	0.652	8.05	-15	42.6
10:15	16.01	170	22.0	0.50	12.88	0.653	8.04	-21	41.3
10:20	16.52	170	22.2	0.48	13.00	0.654	8.03	-28	40.2
10:25	17.01	170	22.5	0.40	13.16	0.655	8.04	-33	41.9
10:30	17.50	170	22.7	0.34	13.24	0.656	8.05	-40	44.0
10:35	17.82	170	22.9	0.31	13.38	0.654	8.05	-44	41.8
10:40	18.16	170	23.1	0.28	13.52	0.653	8.05	-49	40.2
10:45	19.31	170	23.3	0.28	13.53	0.653	8.04	-51	39.8
10:50	20.48	170	23.5	0.29	13.54	0.653	8.09	-53	39.4
10:55	21.36	170	23.7	0.24	13.68	0.653	8.02	-57	40.2
11:00	22.50	170	24.0	0.30	13.84	0.653	8.02	-59	41.0
11:25	25.63	200	25.2	1.20	14.53	0.654	7.95	13	46.0

MW25-220

SAMPLING ORDER		PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
				COUNT VOLUME	TYPE			
1	PFOA 21 PARAMETER MOD 537		NA	2X250mL	HDPE	25ESI20039	11:00	EOM/5-6-21

COMMENTS: (QA/QC?)

MS/MSD COLLECTED @ 1100

DUPLICATE 25ESI20057 COLLECTED @ 11:15

Equip Cal. Prior to use.

IDW INFORMATION: METERS CALIBRATED BEFORE PURGING
PURGE WATER DUMPED ON THE GROUND

DTW: 2.59'

DTB: 13.66'

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 25-23

PROJECT: SEDA
LOCATION: SEAD 25-23

DATE: 5/29/19
INSPECTORS: -
PUMP #: -
SAMPLE ID #: 25ES120004

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
	54	Cloudy, rain	83	4	112	Wet	Horiba U-52	pH, orp, turb

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	0-05'	0.0	10	19.6	7.18	0.904

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	-	2.59'	5.97'	11.66	-

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
-	4.2	300	-	6.22	12.76	0.893	7.52	144	6.8
5	4.47	300	0.8	2.84	12.17	0.915	7.06	163	7.0
10	4.71	300	1.0	2.45	12.12	0.915	7.00	171	7.8
15	4.91	300	2.0	2.34	12.23	0.918	6.98	176	6.7
20	5.11		2.3	2.26	12.23	0.922	6.96	180	
25	5.29	300	2.6	2.17	12.09	0.929	6.94	184	4.2
30	5.46	300	2.9	2.18	11.97	0.935	6.93	187	3.6
35	5.64	300	3.2	2.03	11.90	0.940	6.92	188	3.5
40	5.81	300	3.5	2.00	11.81	0.944	6.92	190	3.6
45	5.97	300	3.8	1.98	11.73	0.946	6.91	191	3.8

25.23

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
				none	2	PFAS	25ES120004	1230	5/24/19 A. Cook

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-25-23

PROJECT: SENECA army DEPOT
LOCATION: SEAD 25

DATE: 3/24/2021
INSPECTORS: BPC
PUMP #: —
SAMPLE ID #: 25SD22040

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (θ - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
08:15	45	OVERCAST, RAIN	HIGH	0	NA	WET	HORIBA U-52	rain
							SKINNY DIPPER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	15	5	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	2.23	4.40	—	08:10

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	—	—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
8:10	2.23	200	0.0	6.34	12.90	0.666	6.02	218	25.1
08:15	3.16	1500	0.2	2.17	10.30	0.693	6.27	212	162
08:20	3.92	150	0.4	2.30	9.86	0.696	6.28	209	12.8
08:25	4.10	150	0.6	2.37	9.55	0.648	6.30	207	12.2
08:30	4.20	150	0.8	2.76	9.27	0.700	6.31	204	120
08:35	4.26	150	1.0	2.78	9.13	0.695	6.35	200	8.81
08:40	4.24	150	1.2	2.40	9.01	0.691	6.37	196	5.63
08:45	4.21	150	1.4	2.45	8.87	0.685	6.39	193	5.53
08:50	4.22	150	1.6	2.52	8.70	0.680	6.42	189	10.4
08:55	4.23	150	1.8	2.64	8.63	0.689	6.43	187	6.91
09:00	4.24	150	2.0	2.76	8.57	0.688	6.44	184	4.54
09:05	4.26	150	2.2	3.26	8.57	0.693	6.46	182	4.60
09:10	4.28	150	2.4	3.98	8.58	0.699	6.48	179	4.64
09:15	4.30	150	2.6	4.02	8.58	0.703	6.51	177	3.80
09:20	4.32	140	2.8	4.07	8.55	0.708	6.53	174	2.91
09:25	4.33	140	3.0	4.09	8.51	0.713	6.55	170	2.98
09:30	4.34	140	3.2	4.08	8.49	0.724	6.58	167	3.04
09:35	4.35	140	3.4	4.09	8.51	0.729	6.60	164	2.76
09:40	4.36	140	3.6	4.10	8.57	0.727	6.61	162	2.74
09:50	4.40	140	4.0	4.65	8.97	0.735	6.74	158	3.51

MW 25-23

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA 21 PARAMETER MOD 537			NA	2X250mL	HDPE	25EE120048	09:40	EJM/5-4-21

COMMENTS: (QA/QC?)

Equip. Cal. prior to Sampling.

IDW INFORMATION:

PURGE WATER DUMPED ON THE GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 28-24

PROJECT: SEDA
LOCATION: SEAD 25-24

DATE: 5/30/19
INSPECTORS:
PUMP #:
SAMPLE ID #: 25ES120005

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM) VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1200	61	Cloudy	72	6	0	wet	Horiba U-52	ORP, pH

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	005'	0	5'	87	7.09	0.703

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	–	01.0		7.65'	

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	2.55	150	–	9.59	12.87	0.647	6.86	8	481
5	1.61	150	0.25	5.26	14.73		6.74	27	448
10	2.12	175	0.25	4.79	13.28	0.637	6.78	32	604
15	2.11	175	0.30	4.70	13.59	0.633	6.70	-33	739
20	2.24	150	0.35	4.72	13.28	0.638	6.70	37	979
25	2.63	325	0.37	7.82	12.67	0.615	6.71	-34	389
30	3.01	350	0.42	7.28	12.33	0.593	6.65	-30	222
35	3.18	325	1	6.62	12.29	0.621	6.63	-29	>1000
40	2.72	~~175~~ 375	1.5	0.72	12.64	0.618	6.61	-28	>1000
45	3.12	375	2	1.81	12.27	0.612	6.59	-26	700
50	2.66	260	2.5	1.83	12.99	0.607	6.55	-24	659
60	2.86	260	3	2.29	12.88	0.597	6.54	-23	685
65	2.86	260	3.25	1.77	12.96	0.593	6.52	-22	189
70	2.83	260	3.75	1.90	13.12	0.604	6.51	17	106
75	2.51	280	4.25	2.14	13.17	0.614	6.49	16	35.2
80	2.88	280	4.75	2.57	13.00	0.613	6.43	-20	16
85	2.94	400	5.25	1.16	12.86	0.611	6.49	-20	13.4
90	3.08	350	5.5	0.38	13.01	0.603	6.46	-19	210
95	3.06	350	5.75	0.28	13.03	0.607	6.46	-19	224
100	3.06	350	6	0.15	13.00	0.608	6.45	-4	162
105	3.06	350	6.25	0.08	13.00	0.607	6.44	-188	106
110	3.00	350	6.50		13.02	0.606	6.43	-7	85.6
115	2.96	300	6.75	0.03	13.05	0.606	6.44	-9	90.8
120	2.96	300	7	0.00	13.03	0.606	6.42	-9	72.6
125	3.04	200	7.5	0.31	13.00	0.607	6.43	-17	70.5
130	3.04	300	8	0.14	12.98	0.606	6.43	-15	194
135	3.04	300	8.5	0.14	12.94	0.607	6.43	-17	132

Pump became disconnect w/ tubing

-7

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 25-24

PROJECT: SEDA
LOCATION: SEAD 25, 25-24

DATE: 5/30/19
INSPECTORS:
PUMP #:
SAMPLE ID #: 25ES120005

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1200	61	cloudy-rain	72	6	0	wet	Horiba U-52	opt, Ph, Turb...

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	~~0.05~~	0'	5'	8.7	7.09	0.783
	DEPTH TO STATIC WATER LEVEL (TOC)			**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
DATA COLLECTED AT WELL SITE	-	1.0			7.65'	
	PID READING (OPENING WELL)					
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)		

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
140	2.92	300	9	0.15	13.02	0.606	6.43	-17	108
145	2.92	300	9.25	0.13	13.07	0.606	6.43	-17	80.6
150	2.92	300	9.75	0.13	13.10	0.606	6.43	-17	62.7
155	2.92	300	~~10~~ 10	0.09	13.11	0.605	6.43	-17	57
160	2.92	300	10.20	0.08	13.11	0.605	6.43	-17	46.2
165	2.92	300	10.30	0.05	13.12	0.606	6.43	-17	39.6
170	2.92	300	10.35	0.04	13.14	0.603	6.43	-17	41.2

25-24

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	None	2	DFAS	23BS120005	1415	5/30/19

Brown

COMMENTS: (QA/QC?)

Turbidity did not stabilize, used to c

Sampling logs

IDW INFORMATION:

25-24

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
				None	2	DFAS	25ES120005	1415	5/30/19 A. COOK

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-24

PROJECT: SENECA OD GROUNDS
LOCATION: ROMULUS, NY

DATE: 3/17/21
INSPECTORS: KM
PUMP #: 18212
SAMPLE ID #: 45MI20RO ; 25RSF20041

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0840	40°F	cloudy	—	—		Dry

MONITORING

INSTRUMENT	DETECTOR
MiniRAE 3000	Horiba
Rot. Hammer	TWS

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

1.57947 (3 = 4.73841)

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	9.84	5	5	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	0.15	0.42	8.34	0847

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm)	pH	ORP (mV)	TURBIDITY (NTU)
0	0.20	200	0	6.47	4.20	0.454	5.49	220	409
5	0.20	200	0.25	2.00	8.15	0.435	6.04	125	296
10	0.25	250	0.5	1.14	7.33	0.418	6.20	103	83.7
15	0.30	250	0.8	1.01	6.83	0.412	6.23	102	35.1
20	0.30	250	1.1	0.87	6.48	0.407	6.24	106	12.4
25	0.30	250	1.4	0.73	6.24	0.407	6.23	110	5.1
30	0.30	250	1.7	0.67	6.03	0.407	6.29	109	1.7
35	0.30	250	2.0	0.64	5.90	0.409	6.46	101	0.0
40	0.30	250	2.3	0.62	5.80	0.409	6.48	101	0.0
45	0.40	300	2.7	0.62	5.72	0.409	6.47	103	0.0
50	0.40	300	3.1	0.60	5.66	0.408	6.55	99	0.0
55	0.40	300	3.5	0.67	5.64	0.406	6.58	97	0.0
60	0.40	300	3.9	0.60	5.63	0.405	6.61	95	0.0
65	0.40	300	4.3	0.56	5.66	0.403	6.59	95	0.0
70	0.42	300	4.7	0.67	5.09	0.410	6.71	87	0.0
75	0.42	300	5.1	0.66	5.11	0.410	6.72	86	0.0
80	0.42	300	5.5	0.68	5.12	0.410	6.73	84	0.0

MW25-24

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
TAL Met-Hg	HNO_3	1/125 mL	P	45MI20110	1010	EOM 13-Dec-21
Hg	HNO_3	1/125 mL	P			
7199	None	1/125 mL	P			
Dissolved Phos ~~8260~~	H_2SO_4	1/250 mL	P			
Total Phos	H_2SO_4	1/250 mL	P			
8260	HCl	3/40 mL	C3			
8270	None	~~2~~/250 mL	AW			
8330	None	2/1L	AW			
6850	None	1/250 mL	P			
OPO_4	None	1/125 mL	P	↓	↓	
PFAS + 21 parameter Mod 537 list	NA	2/250 mL	HDPE	25ES20241	1010	

COMMENTS: (QA/QC?)

Water overflowed top of well

Removed tubing

Sheen on water surface

Equipment calibrated prior to use

Collected EB & FB Blanks at well

~~C25~~

C SEDAPFAS 0001 & SEDAPFA 0101)

IDW INFORMATION:

water dumped on ground

SAMPLING RECORD - GROUNDWATER

SENECA army DEPOT ACTIVITY	PARSONS	WELL #: 25-25

PROJECT: SEDA
LOCATION: SEAD 25-25

DATE: 5/30/19
INSPECTORS:
PUMP #: 642184
SAMPLE ID #: 25GS12000

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
-	-	-	-	-	-		Horiba U52	pH, ORP... etc

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	~~0~~ 5'	0'	5'	35.4	7.22	0.456
	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	-	0.10'		0.31'	7.58	12:35
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)		

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
12:35 0	0.0	220	-	5.25	13.71	0.472	7.32	116	93.3
5	0.3	220	0.8	0.21	14.06	0.469	6.78	135	33.7
10	0.3	220	1.2	0.00	13.71	0.468	6.76	134	13.9
15	0.3	220	1.6	0.00	13.24	0.467	6.76	130	8.8
20	0.31	220	1.9	0.00	13.07	0.472	6.75	127	8.4
25	0.31	220	2.3	0.00	12.99	0.473	6.74	126	8.3
30	0.31	220	2.6	0.00	13.10	0.473	6.74	124	8.3
35									
40									

13:09: Sampled GW

25-25

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT	BOTTLES VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
				None	2		PFAS	25ES1206CU	1310	5/5/19 A. Cook

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-25

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 3/23/2021
INSPECTORS: DR
PUMP #: —
SAMPLE ID #: 25-GS-20042

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
08:30	40	CLEAR	LOW	5	90	WET

MONITORING INSTRUMENT	MONITORING DETECTOR
HORIBA U-52	TURB
SKINNY DIPPER	PERI

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.2

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	9.52	5	5	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	1.89	2.89	8.5	09:20

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	—	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
08:20	1.79	150	0.0	7.68	12.97	0.408	5.49	200	OR
08:30	2.57	150	0.5	6.33	10.38	0.411	5.47	162	164
08:40	2.51	150	0.9	5.95	9.99	0.400	5.47	125	107
08:50	2.55	150	1.3	5.75	9.29	0.379	5.48	88	76.4
09:00	2.57	150	1.5	5.31	9.18	0.366	5.49	52	18.1
09:10	2.61	150	1.7	4.99	9.20	0.358	6.03	28	12.7
09:20	2.65	150	1.9	4.72	9.39	0.350	6.07	19	14.3
09:30	2.65	150	2.1	4.61	9.49	0.348	6.09	12	13.0
09:40	2.62	150	2.3	4.72	9.76	0.341	6.14	0	11.8
09:50	2.65	150	2.5	4.15	9.88	0.337	6.16	-6	4.14
09:25	2.66	150	2.7	3.82	10.10	0.335	6.17	-10	6.36
09:30	2.67	150	2.9	3.79	10.17	0.330	6.18	-17	8.42
09:35	2.64	150	3.1	3.70	10.28	0.329	6.18	-19	8.25
09:40	2.71	150	3.4	3.60	10.36	0.327	6.18	-21	7.81
09:45	2.72	100	3.6	3.32	10.52	0.325	6.18	-25	8.75
09:50	2.74	150	3.8	3.18	10.82	0.322	6.18	-27	9.01
09:55	2.75	150	4.0	3.01	11.12	0.320	6.18	-29	7.60
10:00	2.79	150	4.2	2.89	11.35	0.317	6.18	-31	2.84
10:05	2.79	150	4.4	2.78	11.51	0.314	6.18	-33	11.9
10:10	2.79	150	4.6	2.52	12.04	0.311	6.18	-34	12.2
10:15	2.79	150	4.8	2.40	12.16	0.310	6.18	-35	12.0

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 25-25

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 7/27/2021
INSPECTORS: DPC
PUMP #: —
SAMPLE ID #: 25SD20042

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
08:28	80	CLEAR	Low	5	96	DAMP

MONITORING INSTRUMENT	MONITORING DETECTOR
HORIBA U52	TURB
[illegible] applied	pH

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.2

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	9.56	5	5	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	1.79	2.88	8.5	08:20

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10:20	2.81	150	5.0	2.32	12.39	0.308	6.18	-36	10.3
10:25	2.89	150	5.2	2.16	12.74	0.306	6.18	-36	10.2
10:30	2.84	150	5.4	2.04	13.22	0.303	6.18	-37	9.34
10:35	2.95	150	5.6	1.89	13.27	0.300	6.18	-38	8.12
10:40	2.86	150	5.8	1.79	13.49	0.299	6.18	-39	6.42
10:50	2.95	150	6.2	1.15	11.08	0.300	6.26	0	8.7

MW 25-25

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA 21 PARAMETER 2010 537			NA	2X250mL	HDPE	25ESI20042	10:40	EDM / 3-29-21

COMMENTS: (QA/QC?)

- Cal. equip prior to sampling activities

IDW INFORMATION:

PURGE WATER DUMPED ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-26

PROJECT: Seneca Army Depot
LOCATION: Romulus, New York

DATE: 10/17/11
INSPECTORS: JM/FM
PUMP #: R19240
SAMPLE ID #: 25ESI20009

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1445	47	windy, cloudy	90%	17 mph	W	wet

MONITORING

INSTRUMENT	DETECTOR
~~Horiba U-52~~ Y	SI Pro Plus W1755
HACH 2100Q 39981	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
~2.2 GW

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	*14	4	10	136	8.62	0.680
	DEPTH TO PUMP INTAKE (TOC)	**PUMPING START TIME**				
DATA COLLECTED AT WELL SITE	~~9~~ 18.0	1448				

Measured DTB 13.1

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	JM

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

Water rose to above casing

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1409	above grade	200		5.18	12.4	581.2	7.48	124.8	11.0
1454	above grade	230		0.36	12.7	591.1	7.56	48.2	13.2
1459	above grade	230		0.27	12.8	589.3	7.48	7.8	6.47
1504	above grade	230		0.25	12.8	592.7	7.44	-7.2	3.04
1509	above grade	230		0.22	12.9	593.6	7.42	-19.8	3.37
1514	above grade	230		0.20	12.8	594.0	7.41	-31.3	4.32
1519	"	"		0.18	13.0	597.4	7.39	-43.2	1.85
1524	"	"		0.18	12.9	598.8	7.40	-47.2	1.59
1529	"	"		0.17	12.8	596.5	7.37	-49.4	1.65

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/
					COUNT/ VOLUME	TYPE			DATE
1				—	2×250 mL	PFAS	25ESI20009	1535	JM 10/17/19

COMMENTS: (QA/QC?)

Upon opening, water level equilibrated to above top of inner casing and stabilized ~0.15' above casing. Could not keep water level from rising.

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-27

PROJECT: Seneca Army Depot
LOCATION: Romulus, New York

DATE: 10/16/19
INSPECTORS: JM/FM
PUMP #: R19240
SAMPLE ID #: 25ES120010

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1440	60°F	Cloudy, rain	81%	8 mph	WSW	Bare earth, wet

MONITORING

INSTRUMENT	DETECTOR
~~Horiba U-52~~	~~YSI Pro Plus~~ 417755
WACH	21000 039981

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
~2 gal

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	*15	5	10	41.3	7.26	9.2 ms/cm

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	2.41	3.41	~10 ft	1450

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

*Measured DTB 14.39

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1433	2.90	100		6.88	14.2	12846	6.26	182.0	4.20
1450	2.68	90		1.71	14.2	13028	6.25	180.2	11.3
1503	2.76			1.41	14.2	13051	6.28	176.8	7.17
1508	2.74	80		1.50	14.1	13025	6.29	175.4	5.73
1513		100		~~1.81~~	~~14.2~~	~~12956~~	~~6.30~~	~~172.8~~	FM
1525	3.02	100		1.81	14.2	12956	6.30	172.8	2.86
1530	3.20	100		2.12	14.4	12923	6.30	172.7	4.23
1535	3.21	100		2.40	14.3	12925	6.30	172.1	3.03
1540	3.34	100		2.31	14.4	12882	6.30	171.1	2.45
1545	3.40	100		2.67	14.3	12800	6.30	170.0	3.60
1550	3.41	100		2.58	14.3	12679	6.31	168.3	3.41

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/
					COUNT/ VOLUME	TYPE			DATE
				—	2x250 mL	PFAS	25513a0010	1555	JM 10/16/19

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-28

PROJECT: Seneca Army Depot
LOCATION: Romulus, New York

DATE: 10/18/19
INSPECTORS: JM/FM
PUMP #: R19240
SAMPLE ID #: 25ESI20011

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1147	44	cloudy	79%	11mph	WNW	Surrounded by water	~~Horiba U-52~~ YSI Pro Plus 417551	
							~~75I~~ HACH 2100Q 39981	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
~2.14

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	*11.5	6.5	5	321	7.35	0.930
	DEPTH TO POINT OF WELL (TOC)	DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)					
	0.0 ppm	0.25		0.47	~~8~~ 10' (started out @ 8', then moved to 10' after several minutes of purging	1156
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)		

Measured DTB: 13.00

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1158	0.35	150		6.08	14.0	844	6.77	61.4	289
1203	0.30	150		0.68	13.9	858	7.00	35.3	60.4
1208	0.35	175		0.33	14.7	865	6.99	30.4	16.6
1213	0.35	175		0.28	15.0	881	6.98	28.8	19.6
1218	0.35	175		0.24	15.1	883	6.95	29.0	14.5
1223	0.35	175		0.23	15.3	881	6.95	28.5	11.5
1228	0.43	175		0.23	15.4	875	6.95	28.4	6.12
1233	0.45	175		0.21	15.5	875	6.97	27.9	6.54
1238	0.45	175		0.20	15.4	875	6.96	28.4	10.6
1243	0.46	175		0.19	15.6	869	6.94	29.4	5.80
1248	0.47	175		0.18	15.6	869	6.93	30.0	2.56
1253	0.47	175		0.18	15.5	867	6.94	29.9	2.01

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1				—	2×250mL	PFAS	25ESI20018	1255	JM 10/18
2				—	2×250 mL	PFAS	25ESI20019	1300	JM 10/18
3				—	2×250 mL	PFAS	25ESI20018MS	1255	JM 10/18
4				—	~~2×~~ 1	PFAS	25ESI20018MSD	1255	JM 10/18
5				—	2×250 mL	PFAS	25ESI01003	1255	JM 10/18
					2×250mL				

COMMENTS: (QA/QC?)

Field blank collected (25ESI01003)

Well surrounded by water.

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-28

PROJECT: Seneca Army Depot
LOCATION: SWMU 25

DATE: 3/30/21
INSPECTORS: MT
PUMP #: A01769
SAMPLE ID #: 2ES125028345

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1340	56	Sunny	42	15	180	Wet

MONITORING INSTRUMENT	MONITORING DETECTOR
HORIBA	hach
PID	ppm

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	13	6.5	5	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	0.0	0.8	11	1345

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA			NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1350	.5	150	.50	2.08	15.50	1.19	6.72	-29	167
1355	.5	100	.75	1.93	15.31	1.20	6.70	-31	127
1400	.5	100	1.00	1.71	15.00	1.21	6.68	-36	116
1405	.5	100	1.25	1.56	14.96	1.23	6.68	-37	101
1410	.5	100	1.50	1.38	14.67	1.23	6.68	-38	82.1
1415	.5	100	1.75	1.24	14.24	1.24	6.70	-40	65.8
1420	.5	100	2.00	1.03	14.02	1.24	6.71	-41	52.6
1425	.8	100	2.25	0.97	14.18	1.24	6.72	-40	48.9
1430	.8	100	2.50	0.89	14.21	1.24	6.73	-40	39.8
1435	.8	100	2.75	0.84	14.31	1.24	6.75	-40	24.0
1440	.8	100	3.00	0.78	14.36	1.24	6.77	-40	16.3
1445	.8	100	3.25	0.79	14.45	1.24	6.77	-40	5.12
1450	.8	100	3.50	0.79	14.00	1.28	6.77	-40	5.12
1455	.8	100	3.75	0.79	13.62	1.29	6.78	-39	4.74
1500	.8	100	4.00	0.79	12.37	1.29	6.78	-39	6.89
>	Sample			2.25	13.88	1.25	6.97	12	4.32

MW 25-28

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
	PFOA + 21 PARAM MOD 537			NONE	2/250	HDPE	25ESI20045	1505	MA 3/30/21 EDA 5-6-21

COMMENTS: (QA/QC?)

HORIBA, PID, Hach calibrated

Hach VS00 for TURBIDITY

IDW INFORMATION:

Water Dumped on Ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-28

PROJECT: Seneca Army Depot
LOCATION: Romulus, New York

DATE: 10/17/19
INSPECTORS: JM/FM
PUMP #: R19240
SAMPLE ID #: 25ESI20019

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1300	47	rain, windy	90%	18mph	W	wet

MONITORING

INSTRUMENT	DETECTOR
~~Horiba U-52~~	YSI Pro Plus 417SS
HACH 2100Q 39981	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
~a.35 GW

Measured DTB: 16.89

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	17*	7	10	>1000	7.59	0.590
	PID READING (OPENING WELL)	**DEPTH TO STATIC WATER LEVEL (TOC)**		**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
DATA COLLECTED AT WELL SITE	0.0ppm	2.88		5.75	12	1305
	PUMP PRIOR TO SAMPLING (cps)			**PUMP AFTER SAMPLING (cps)**		
RADIATION SCREENING DATA						

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1309	5.11	~~80~~		~~7.45~~ 5.70	12.9	869.3	7.07	146.4	3.20
1314	5.72	~~80~~		1.97	13.5	883.0	7.31	132.4	2.33
1319	4.80	100		1.59	13.6	896.3	7.30	131.7	1.27
1324	5.22	100		1.56	13.8	890.0	7.29	130.9	1.34
1329	5.73	100		1.59	13.6	888.3	7.28	131.1	3.01

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/
					COUNT/ VOLUME	TYPE			DATE
				—	2×250 mL	PFAS	355I3004	1335	JM 10/17

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-29

PROJECT: Seneca Army
LOCATION: 25 SEAD

DATE: 3/24/21
INSPECTORS: MAA
PUMP #: A01769
SAMPLE ID #: 25ESI20026

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1312	54	CLOUDY	87	9	155	WET	HORIBA	HACH
							PID	pen

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	16.9	7	10	NA	NA	NA

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	0.1	2.7	11.0	14.9	1330

	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
RADIATION SCREENING DATA		NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (mL/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1335	4.3	150	.50	1.72	11.49	1.05	6.81	187	6.17
1340	4.6	100	.60	1.77	10.62	0.894	6.94	186	8.20
1345	4.9	100	.65	1.84	9.96	0.791	7.02	185	11.6
1350	5.3	100	.75	1.90	9.93	0.734	7.10	184	13.0
1355	5.4	100	1.00	1.84	9.99	0.732	7.11	185	14.0
1400	6.3	100	1.20	1.72	10.02	0.729	7.11	186	14.6
1405	6.6	100	1.40	1.69	10.20	0.725	7.12	187	14.9
1410	6.8	100	1.60	1.61	10.20	0.725	7.11	188	12.4
1415	6.9	100	1.80	1.56	10.16	0.727	7.10	188	10.9
1420	7.1	100	2.00	1.40	10.12	0.729	7.09	189	8.21
1425	7.2	100	2.3	1.32	10.10	0.730	7.09	189	6.47
1430	7.6	100	2.6	1.24	10.94	0.728	7.10	189	6.39
1435	8.1	160	3.0	1.19	10.96	0.722	7.11	190	6.11
1440	8.7	100	3.3	1.13	10.30	0.716	7.11	190	5.98
1445	9.0	100	3.5	1.09	10.33	0.709	7.12	190	4.81
1450	9.4	100	3.7	1.06	10.35	0.704	7.13	190	3.96
1455	9.7	100	4.0	1.00	10.41	0.696	7.13	190	3.28
1500	10.0	100	4.2	1.03	10.45	0.696	7.14	190	5.67
1505	10.3	100	4.5	1.04	10.50	0.696	7.15	190	6.29
1510	10.7	100	4.7	1.04	10.46	0.696	7.15	189	7.10
1515									

7 Sample 2.69 11.06 0.703 7.31 181

MW25-29

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA + 21 PFAS MOD 537			NONE	2/250	HDPE	25ES120	1520	BOA 5-4-21

COMMENTS: (QA/QC?)

HORIBA, PID + HACH CALIBRATED

HACH USED TO TEST TURBIDITY

RAIN HAS STOPPED

IDW INFORMATION:

WATER DUMPED ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 25-30

PROJECT: Seneca Army Depot
LOCATION: Romulus, New York

DATE: 10/17/19
INSPECTORS: SM/FM
PUMP #: R19240
SAMPLE ID #: 25ESI30013

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1617	46	Overcast	92%	18	NW	wet	~~Horiba U-52~~	YSI Pro Plus 417551
							YSI	HACH 2100Q 39981

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
~2.07 Gal

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	*17	7	10	>1000	6.82	1.0
	DEPTH TO STATIC WATER LEVEL (TOC)	**DEPTH TO STABILIZED WATER LEVEL (TOC)**		**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**	
DATA COLLECTED AT WELL SITE	3.97	4.72		11.5	1618	
	PID READING (OPENING WELL)					
	0.0 ppm					
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)			

Measured DTB: 16.32

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1619	4.20	125		7.21	12.4	1057	7.16	43.9	36.4
1624	4.35	100		0.80	12.4	1065	7.10	24.8	24.3
1629	4.44	100		0.51	12.4	1063	7.04	18.2	14.0
1634	4.48	100		0.43	12.6	1059	7.00	15.2	11.5
1639	4.66	100		0.32	12.9	1057	6.99	11.0	5.50
1644	4.70	100		0.34	12.9	1053	7.00	7.2	4.79
1649	4.72	100		0.35	12.8	1053	7.00	4.4	4.89

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/
					COUNT/ VOLUME	TYPE			DATE
				—	2 x 250 mL	PFAS	25ESI20013	1650	JM 10/17

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-30

PROJECT: Seneca Army Depot - SEAD 25
LOCATION: Romulus, NY

DATE: 3/23/21
INSPECTORS: R. Inclima
PUMP #: 18212
SAMPLE ID #: 25ESI20047

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1330	65°F	Sunny	23%	11 mph	S	dry-damp

MONITORING

INSTRUMENT	DETECTOR
Horiba	PID
Turbidimeter	Water Level

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1 well volume = 2.55 gal.

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	16.34'	7'	10'	N/A	N/A	N/A

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	8.69'	1.63'	~ 14.00'	1345

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	N/A	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
5	1.40	140	0.2	1.05	14.97	0.638	5.70	164	6.99
10	1.51	140	0.4	0.93	13.99	0.643	5.96	138	7.37
20	1.56	140	0.8	0.83	13.44	0.649	6.15	122	5.87
25	1.58	140	1.0	0.78	13.54	0.648	6.20	116	4.98
30	1.60	140	1.2	0.76	13.39	0.650	6.25	111	4.65
35	1.61	140	1.4	0.73	13.42	0.648	6.29	107	5.15
40	1.61	140	1.6	0.73	13.32	0.649	6.32	103	4.11
45	1.62	140	1.8	0.72	13.39	0.648	6.34	100	4.85
50	1.62	140	2.0	0.69	13.52	0.647	6.38	95	4.62
55	1.63	140	2.2	0.69	13.43	0.650	6.39	92	4.59
60	1.63	140	2.4	0.70	13.40	0.648	6.40	90	3.91
-	1.63	140	3.0	0.81	13.28	0.667	6.45	88	3.48

Post Sample

Post Sample

MW25-30

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
	PFOA+, Mod537, 21 Compounds			-	2/250mL	HDPE	25ESI20047	1450	EOH 3-23-21

COMMENTS: (QA/QC?)

- Sampled with peri pump + HDPE tubing

Calibrated equipment prior to sampling event.

PID Headspace: 0.0 ppm

IDW INFORMATION:

- Waste water dumped on ground
- PPE, tubing, solids in dumpster

Page 1 of 5

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-315

PROJECT: SENECA ARMY DEPOT
LOCATION: ROMULUS, NEW YORK
SEAD 25

DATE: 8/19/2020
INSPECTORS: S. Goldthwait
PUMP #: 2288
SAMPLE ID #: 25ES120016

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1:00PM	67	SUNNY	—	GUSTS	—	DRY	15265	25335

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
Peristaltic pump, Hersie

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	16 ~~16~~ ~~81~~	6 ~~6~~ ~~41~~	10 40	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	NA	15.85	~~19.84~~ 17.2	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS (umhos) Cm)	pH	ORP (mV)	TURBIDITY (NTU)
1310	10.85								
1340	11.25	200		0.37	21.06	1.02	6.80	-107	220
1345	12.5	200		0.38	20.52	1.02	6.73	-106	182
1350	13.3	160		0.36	20.29	1.04	6.67	-105	135
1355	13.9	160		0.35	20.18	1.04	6.66	-107	74.1
1400	14.4	150		0.25	20.87	1.01	6.66	-116	40.4
1405	15.3	150		0.29	19.89	1.02	6.65	-130	13.0
1410	15.85	150		0.26	20.56	1.01	6.65	-141	11.5
1415	16.32	150		0.19	21.50	0.998	6.66	-144	2.9
1420	16.8	150		0.22	21.73	1.00	6.67	-145	0.0
1425	17.15	150		0.21	21.73	1.01	6.68	-147	1.2
1430	17.55	160		0.17	21.53	0.987	6.67	-162	1.5
1435	17.7	160		0.17	21.43	0.988	6.67	-163	1.5
8/20/20 SAMPLING DAY									
0740	13.8								
0800	15.65	150		2.80	15.07	0.962	6.15	72	170
0810	16.8	120		3.04	~~15.28~~	0.958	6.50	30	73.2
Last measurement	17.2	—			15.25				

MW25-315

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFAs, Mod. 537, @ 1 comp.			NA	2 @ 250mL	Plastic	25ES2 20016	0810	EOM 10-15-20.

COMMENTS: (QA/QC?)

- HDPE; Silicon tubing used

IDW INFORMATION:

- IDW in dumpster: GW on & rinsate

25LM 20148

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-31S

PROJECT: SENECA ARMY DEPOT
LOCATION: ROMULUS, NY

DATE: 3/22/21
INSPECTORS: KM
PUMP #: 18212
SAMPLE ID #: 25ESI20048
25LM 20149, 25ESI 20049

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1435	64°F	Sunny				Dry	Mini RAE 3000	PID Turbo
							Horiba	Horiba

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
2.13204

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	18.20	6	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.9	5.12	7.79	16.20	1445

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	6.39	250	0	3.00	10.99	1.08	7.35	-115	433
10	7.01	160	0.4	0.74	11.24	1.13	7.01	-119	30.5
20	7.45	160	0.8	0.58	11.23	1.12	6.89	-126	29.0
30	7.60	160	1.2	0.55	11.23	1.13	6.86	-131	20.6
35	7.69	160	1.4	0.53	11.77	1.12	6.85	-133	16.7
40	7.70	160	1.6	0.53	11.64	1.12	6.86	-135	19.2
45	7.74	160	1.8	0.50	11.73	1.12	6.87	-136	19.3
50	7.75	160	2.0	0.49	12.49	1.10	6.88	-137	15.4
55	7.79	160	2.2	0.49	12.62	1.10	6.89	-139	17.6
					18.69	0.962	7.36		
Final				1.54	↓	↓	↓	-111	22.0

MW25-315

SAMPLING ORDER		PRESERVATIVES	BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
			COUNT/ VOLUME	TYPE			
1	PFOAS + 21 parameters MOD 537	None	2/250 mL	HDPE	25FSI20048	1550	EOM 3-22-24
	PFOAS + 21 parameters MOD 537	None	2/250 mL	HDPE	25FSI20048MS	1550	
	PFOAS + 21 parameters MOD 537	None	2/250 mL	HDPE	25FSI20048MSD	1550	
	PFOAS + 21 parameters MOD 537	None	2/250 mL	HDPE	25FSI20055	1600	
	VOCs 8260c	HCL	3/40 mL	Glass	25Lm20149	1550	
	VOCs 8260c	HCL	3/40 mL	Glass	25Lm20149MS	1550	
	VOCs 8260c	HCL	3/40 mL	Glass	25Lm20149MSD	1550	
	VOCs 8260c	HCL	3/40 mL	Glass	25Lm20150	1600	

COMMENTS: (QA/QC?)

peri + HDPE tubing

- Calibrated Equip. prior to sampling event.
- MS/MSD & Dup collected.

IDW INFORMATION:

Water dumped on ground

Page 1 of 5

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-3/8-UP

PROJECT: SEAD
LOCATION: ~~AREA~~ 25
SEAD

DATE: 8/19/2020
INSPECTORS: DAN CHAMBERLAND
PUMP #: 047622
SAMPLE ID #: 25BSE 20017

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
13:25	80	PARTLY	LOW	15	0	DRY	18758	21172
							044681	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

Monsoon Hersia

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	81	41	40	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	10.50	19.01	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
13:15	10.50	250	0	1.09	16.8	0.585	6.82	65	OR
13:25	14.83	250	0.5	0.58	20.65	0.601	6.68	51	OR
13:35	15.96	250	1.0	0.35	19.87	0.611	6.71	48	850
13:45	16.55	200	1.5	0.35	20.11	0.616	6.66	44	787
13:55	16.66	250	1.9	0.30	20.58	0.608	6.67	37	475
14:05	17.01	250	2.4	0.33	19.63	0.604	6.66	26	355
14:15	17.50	200	2.9	0.29	14.96	0.602	6.68	11	305
14:25	18.32	250	3.5	0.27	19.00	0.602	6.66	4	250
14:35	18.33	200	4.0	0.23	18.60	0.557	6.70	-4	172
14:45	18.30	200	4.5	0.20	19.88	0.589	6.71	-4	175
14:55	18.30	200	5.0	0.25	20.29	0.544	6.75	-6	165
15:00	18.24	300	5.3	0.82	19.17	0.597	6.77	34	98.1
15:05	18.42	250	5.5	0.78	16.88	0.582	6.75	27	70.7
15:10	18.29	150	5.6	0.68	17.92	0.590	6.71	19	126
15:15	18.24	150	5.8	0.35	18.50	0.584	6.70	8	65.7
15:20	18.39	150	6.0	0.23	16.95	0.601	6.68	1	66.2
15:25	19.00	200	6.2	0.19	16.61	0.588	6.68	-12	52.9
15:30	18.96	200	6.4	0.20	17.04	0.583	6.68	-20	44.2
15:35	19.02	200	6.6	0.16	17.07	0.583	6.69	-23	54.3
15:40	19.01	200	6.8	0.14	17.81	0.587	6.72	-26	51.3

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA, Mod			NA	6x250mL	PLASTIC	1	15:40	8/14/2017 EGA
	537.1 Comp.						See missing below.		
							25ESI 2017		

COMMENTS: (QA/QC?)

COLLECT MS 25ESI 2017 MS
COLLECT MSD 25ESI 2017 MSD, BOTH AT 15:40

- collected sample from upper section of screen (41'-61')
- HDPE : Silica tubing used

IDW INFORMATION:

- FDW in dumpster : GW on ground.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-31D-UP

PROJECT: Seneca Army Depot - SEAD 25
LOCATION: Romulus, NY

DATE: 3/30/21
INSPECTORS: R. Inclima
PUMP #: 24737
SAMPLE ID #: 25ESI20049

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0800	38°F	Sunny	64%	8 mph	SSE	damp/dry

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	PID
Turbidimeter	Heron

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1 well volume = 48.08 gal

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN ~~(TOC)~~	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	82.43'	41' bgs	40	N/A	N/A	N/A

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	8.90'	(RJ) ~~5.41~~ 14.41'	~51'	0850

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	N/A	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND ~~mS/cm~~ uS/cm	pH	ORP (mV)	TURBIDITY (NTU)
5	9.62	300	0.4	4.58	10.96	0.736	5.25	-15	57.5
10	11.05	110	0.52	1.11	10.55	0.744	5.75	-125	84.9
20	11.16	160	0.95	1.31	10.65	0.741	5.90	-128	94.2
30	13.11	320	1.8	1.13	11.49	0.736	6.15	-118	88.3
40	13.79	150	2.2	1.21	12.09	0.733	6.29	-111	84.7
50	13.63	300	3.0	1.17	12.57	0.734	6.37	-112	75.3
60	13.62	225	3.6	1.16	13.06	0.736	6.43	-115	67.3
80	13.39	225	4.8	1.51	13.96	0.735	6.52	-121	64.8
90	13.75	150	5.2	0.97	14.33	0.733	6.55	-121	42.4
100	14.42	300	6.0	0.71	14.65	0.728	6.58	-117	43.1
110	14.38	190	(RJ) ~~6.05~~ 6.5	1.13	15.09	0.725	6.61	-115	32.9
120	14.36	190	7.0	0.95	15.49	0.723	6.63	-121	34.3
130	13.97	260	7.7	0.95	15.85	0.725	6.63	-123	35.8
140	14.34	225	8.3	0.99	15.97	0.723	6.64	-124	27.6
150	13.99	260	9.0	0.60	16.51	0.723	6.65	-121	27.9
160	14.18	225	9.6	1.40	17.01	0.722	6.65	-123	24.5
170	14.41	190	10.1	0.91	17.07	0.719	6.67	-125	24.4
Post-sample ~	14.49	~	~10.9	0.92	17.71	0.723	6.71	-109	22.7

MW25-31D-VP

SAMPLING ORDER		PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
				COUNT/ VOLUME	TYPE			
PFOA, Mod 537, & 21 compounds	EB		-	2/250mL	HDPE	SEDAPFAS00011	0740	EOM/5-5-21
PFOA, Mod 537, & 21 compounds			-	2/250mL	HDPE	25ESI20049	1145	✓

COMMENTS: (QA/QC?)

PID Headspace: 0.0 ppm

- Sampled using Monsoon pump & HDPE tubing
- Varying flow rate result of constantly changing ~~pressure head~~ head pressure above Monsoon pump; an average for that time interval
- the "sine curve-like" DO reading could be a result of an inconsistent flow rate

- Equip cal. prior to use

20 = 20.0 NTU
100 = 100 NTU
800 = 806 NTU

Turbidimeter Cal: 10 standard = 10.0 NTU (passed)

IDW INFORMATION:

- Waste water dumped on ground.
- PPE, tubing, solid waste in dumpster.

25.7 - 8 %

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-310 ~~DUP~~ DW
PROJECT: SEAD		DATE: 8/20/2020
LOCATION: AREA 25 SEAD		INSPECTORS: DAN CHAMBERLAND
		PUMP #: 24875
		SAMPLE ID #: 25ES2 2018, 25ES2 2023

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTO
07:50	65	CLEAR, CALM	LOW	0	NA	DEW	19758	21172
							044681	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.043	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.159	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

Monsoon, Hafsia

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	81	41	40	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	10.71	24.20	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
07:45	10.71	300	0.0	0.42	11.30	0.592	6.72	25	OR
07:55	17.06	~~400~~ 300	0.0	0.33	11.87	0.591	6.84	20	OR
08:05	18.47	400	2.0	0.35	11.93	0.567	6.75	28	OR
08:15	19.22	300	3.0	0.29	11.62	0.556	6.54	34	855
08:25	19.42	300	3.7	0.27	11.61	0.557	6.55	36	885
08:45	19.67	300	6.0	0.25	11.79	0.566	6.36	36	622
08:55	20.14	300	7.0	0.27	11.96	0.563	6.32	34	486
09:05	20.18	300	~~7~~ 8	0.26	12.33	0.564	6.32	30	445
09:35	20.87	300	8.5	0.24	12.15	0.554	6.35	21	414
09:45	21.14	300	9.2	0.25	12.77	0.549	6.34	16	344
09:55	24.41	400	10	0.25	12.36	0.558	6.30	-1	167
10:05	24.79	400	11	0.25	13.13	0.557	6.42	-19	412
10:15	24.99	300	11.7	0.22	13.03	0.552	6.48	-28	335
10:25	24.97	300	12.5	0.21	12.97	0.555	6.76	-49	390
10:35	24.98	300	13.2	0.20	13.05	0.552	6.76	-56	414
10:45	24.99	300	13.9	0.20	13.90	0.541	6.69	-51	140
10:55	24.19	280	14.6	0.20	13.94	0.546	6.67	-52	80.7
11:00	24.60	280	15.3	0.19	13.94	0.551	6.72	-79	350
11:05	24.71	280	~~+6~~ 15.6	0.19	14.38	0.554	6.73	-86	354
11:10	24.39	280	~~+5~~ 15.9	0.19	13.99	0.554	6.73	-90	358
11:15	24.49	280	~~+7~~ 16.1	0.19	13.91	0.554	6.73	-94	360

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-310 DW
PROJECT: SEAD		DATE: 8/20/2020
LOCATION: AREA 25 SEAD		INSPECTORS: DAN CHAMBERLAND
		PUMP #: 24875
		SAMPLE ID #: 25 ESE 20018

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
see page 1							18358	21172
							044681	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.153	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)] see page 6

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	see page 1					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	see page 1				

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)	
11:20	24.75	280	~~17.5~~ 16.4	0.18	14.07	0.550	6.72	-99	334	
11:25	25.55	250	~~18.0~~ 16.7	0.16	13.98	0.555	6.70	-104	285	
11:30	25.60	250	~~18.2~~ 17	0.17	14.04	0.551	6.70	-104	284	
11:35	25.52	250	17.3	0.17	14.25	0.558	6.70	-108	316	
11:40	25.32	250	17.6	0.17	14.18	0.560	6.71	-111	323	
11:45	25.24	250	17.8	0.17	14.17	0.558	6.71	-114	338	
11:50	25.18	220	18.1	0.18	14.02	0.556	6.72	-117	357	
11:55	24.87	220	18.3	0.18	14.91	0.555	6.70	-117	361	
12:00	24.76	220	18.5	0.18	15.87	0.556	6.65	-118	358	
12:05	23.82	220	18.8	0.18	16.76	0.557	6.63	-121	363	EMPTY HORIBA
12:15	25.23	220	19.0	0.17	14.14	0.558	6.59	-58	129	
12:20	24.81	220	19.2	0.16	14.89	0.558	6.69	-81	361	
12:25	24.65	210	19.5	0.14	15.25	0.552	6.79	-97	358	
12:30	24.18	210	19.8	0.17	14.69	0.552	6.78	-106	359	
12:35	24.15	200	20.1	0.16	14.76	0.550	6.77	-119	322	
12:40	24.19	210	20.4	0.16	14.26	0.552	6.76	-123	316	
12:45	24.26	210	20.6	0.16	14.20	0.553	6.75	-123	300	

MW25-310-ON

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA Mod			NA	2X250mL	PLASTIC	+	1245	8/20/2024 EG
	537, 2 (comp.						25ESI 20018	1245	
							25ESI 20023 (Dup)	1201	↓

COMMENTS: (QA/QC?)

COLLECT DUPLICATE 25ESI20023 @ 12:01

" sample 25ESI20018 @ 1245

- Samples from Lower Section of screen (60'-80') bgs

-HDPE; Silicon tubing used

IDW INFORMATION:

-IDW in dumpster; gw encountered

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-31D-DN

PROJECT: Seneca Army Depot - SEAD 25
LOCATION: Romulus, NY

DATE: 3/30/21
INSPECTORS: R. Indiviglio
PUMP #: 24737
SAMPLE ID #: 25SI20050

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1200	57°F	Sunny	35%	16 mph	S	damp/dry

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	PID
Turbidimeter	Hach

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1 well volume = 47.9 gal (well not fully recharged from sampling @ stable depth)

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN ~~(TOC)~~	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	82.43'	41' bgs	40	N/A	N/A	N/A

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	9.06'	14.51'	~71'	1210

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	N/A	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND mS/cm (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10	10.62	150	0.4	2.58	18.12	0.702	6.83	-91	154
20	10.74	190	0.9	2.15	17.34	0.754	6.79	-108	182
30	11.34	110	1.2	1.80	17.02	0.741	6.81	-117	166
40	11.68	150	1.6	1.36	17.11	0.740	6.80	-121	137
50	11.91	150	2.0	1.14	16.23	0.740	6.79	-125	112
60	12.36	190	2.5	0.76	17.36	0.702	6.80	-128	96.4
70	12.36	190	3.0	0.64	17.73	0.702	6.79	-129	76.1
80	12.25	190	3.5	0.60	16.23	0.710	6.79	-132	72.8
90	12.03	190	4.0	0.43	18.40	0.692	6.78	-132	56.7
100	13.11	260	4.7	0.47	16.00	0.721	6.76	-134	36.2
110	13.38	150	5.1	0.40	15.81	0.722	6.76	-136	30.1
120	13.62	190	5.6	0.43	16.04	0.720	6.76	-137	26.6
130	13.50	190	6.1	0.32	16.09	0.721	6.76	-139	21.2
140	13.55	150	6.5	0.29	16.43	0.714	6.76	-139	25.0
150	13.88	225	7.1	0.30	15.96	0.715	6.76	-140	21.4
160	13.84	225	7.7	0.26	16.49	0.712	6.75	-141	16.6
170	13.87	225	8.3	0.24	16.45	0.711	6.76	-142	15.1
180	13.91	260	9.0	0.25	16.47	0.713	6.76	-143	14.4
190	13.91	190	9.5	0.24	16.62	0.710	6.76	-144	13.0
200	14.51	225	10.1	0.23	15.36	0.708	6.77	-144	12.6
Post-sample	15.03	-	~10.7	0.80	16.79	0.703	6.80	-126	11.3

MW25-31D-DN

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT: VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA, Mod 537. + 21 compounds			-	2/250 mL	HDPE	25ESE20050	1535	EDM/ 5-5-21

COMMENTS: (QA/QC?)

PID Headspace: 0.0 ppm

- Sampled using monsoon pump & HDPE tubing
- varying flow due to constant changing of ~~pressure head~~ head pressure (RE) above monsoon pump; flow rate = average of that time interval
- purged ~ 10.9 gallons of water before sampling MW25-31D-UP

- Equip cal. prior to use

See MW25-31D-UP for calibration info.

IDW INFORMATION:

- Waste water dumped on ground.
- PPE, tubing & solid waste in dumpster.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 25-32

PROJECT: Seneca Army Depot
LOCATION: SEAD 25

DATE: 8-19-20
INSPECTORS: E. Ashton
PUMP #: QED 1920
SAMPLE ID #: 25 ES I 20019

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1200	70	Cldy	—	—	—	Dry

MONITORING INSTRUMENT	MONITORING DETECTOR
—	—
Horiba	Peristaltic P.

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
14 - 10.60 x .163 x 3 vol = 1.66

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	14	4	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	10.60	13.70	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1200	10.76								
1219	—	start pump.		Pumping rate = 210 mL/min.					
1225	10.80	—	—	0.20	21.70	0.919	6.63	125	595
1230	12.34	—	—	0.29	20.55	0.887	6.59	136	325
1235	11.3	pump rate stopped to stabilize.		0.28	20.91	0.852	6.56	146	143
				~~0.29~~	~~20.40~~	~~0.861~~	~~6.56~~	~~145~~	~~124~~
1240	11.69	—	—	0.29	20.40	0.861	6.56	145	124
1245	11.88	—	—	0.31	19.83	0.894	6.56	136	25.2
1250	12.15	—	—	0.32	18.08	0.912	6.56	126	20.1
1300	12.58	—	—	0.29	17.73	0.923	6.58	110	21.0
1305	12.91	—	—	0.33	17.93	0.927	6.59	110	33.9
1310	13.05	—	—	0.35	18.11	0.932	6.59	111	101
1315	13.20	—	—	0.40	18.35	0.934	6.60	114	175
1320	13.34	—	—	0.46	19.48	0.911	6.62	115	165
1325	13.40	—	—	0.67	19.77	0.906	6.62	116	208
1330	13.57	—	—	0.76	19.30	0.925	6.62	116	171
1335	13.69	—	—	0.88	19.46	0.921	6.63	108	172
1340	13.70	—	—	0.95	19.43	0.927	6.64	108	187
1345	13.76	—	—	1.08	19.01	0.935	6.64	106	230
Stopped pump, well dry, letting recharge to 80% static after.									
1430	DRY	= 11.00	FL. Sampled						

Note: Pumped at lowest setting per pump manual with drawdown essential rate as purge continued = 210 mL/min.

Final parameters → 10.09 20.70 0.946 6.85 157 275

MW25-32

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFAS, Mod 537 21 compounds			NA	2/250mL	Plastic	25AS22019	1430	EOA 8-19-20

COMMENTS: (QA/QC?)

- HDPE; silica tubing used

IDW INFORMATION:

- Purged water dumped on ground; IDW in dumpster.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-32

PROJECT: Seneca Army
LOCATION: Seneca 25

DATE: 3/24/21
INSPECTORS: MA
PUMP #: A01769
SAMPLE ID #: 25851200 51

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1054	48	RAIN	94	7	135	WET	Hughes PID	HNEW Ion

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	16.78	4	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	10.1	12.0	14.5	1103

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)	
	NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1110	10.7	200	.70	2.53	15.71	0.883	6.98	138	561
1115	11.2	100	1.00	2.61	14.02	0.890	6.84	138	382
1120	11.4	100	1.20	2.73	13.81	0.894	6.68	142	243
1125	11.6	100	1.40	2.12	12.66	0.911	6.71	145	110
1130	11.7	100	1.60	1.90	12.46	0.946	6.74	149	64.8
1135	11.8	100	1.70	1.82	12.12	0.970	6.76	153	51.0
1140	12.0	100	1.90	1.78	11.54	0.972	6.76	156	15.6
1145	12.0	100	2.00	1.72	11.40	0.980	6.75	166	14.8
1150	12.0	100	2.20	1.66	11.50	0.992	6.75	170	13.2
1155	12.0	100	2.40	1.66	11.51	0.996	6.75	173	12.4
1200	12.0	100	2.50	1.59	11.22	0.999	6.75	180	11.9
1205	12.0	100	2.70	1.55	10.96	0.999	6.75	184	11.0
1210	12.0	100	2.80	1.55	10.59	1.02	6.75	186	10.6
1215	12.0	100	2.90	1.52	10.56	1.03	6.76	187	10.2
1220	12.0	100	3.00	1.49	10.53	1.03	6.77	188	10.0
1225	12.0	100	3.20	1.49	10.48	1.03	6.77	188	9.41
1230	12.0	100	3.40	1.49	10.48	1.03	6.77	188	8.00
1235	12.0	100	3.68	1.49	10.49	1.03	6.77	188	7.26
> SAMPLE				1.72	11.50	1.05	6.81	187	10.62

MW25-32

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT VOLUME	TYPE			
	PFOA + 21 Perfluoro MOD 537			NONE	2/250	HDPE	25851	1240	EWA/ 5-3-21

COMMENTS: (QA/QC?)

CALABRATIZED HORIBA, PID, & hach
USING hach FOR TURBIDITY READING
OUTSIDE OF WELL CASING WELL IS
NUMBERED CORRECTLY MW25-32
IN SIDE COVER AND ON PLUG IT SAYS
MW26-32

IDW INFORMATION:

DUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-33

PROJECT: SEAD
LOCATION: AREA 25
SEAD

DATE: 8/20/2020
INSPECTORS: DAN CHAMBERLAND
PUMP #: 1797
SAMPLE ID #: 25ES120020

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
14:15	75	CLEAR, BREEZY	LOW	10	220	DRY	18358	21172
							044681	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

Horiba, Peristaltic pump

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	14	4	10	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	NA	8.00	9-70	—	—

	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
RADIATION SCREENING DATA	NA			NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND. (mS/cm)	pH	ORP (mV)	TURBIDITY (NTU)
14:15	8.00	200	0	1.59	21.63	0.574	6.71	9	OR
14:25	9.05	200	0.5	0.39	18.18	0.574	6.33	-80	6.4
14:35	9.35	200	1.0	0.29	17.93	0.567	6.25	-65	0.0
14:45	9.51	200	1.5	0.28	18.00	0.564	6.22	-60	0.0
14:55	9.70	200	2.0	0.28	17.11	0.571	6.19	-60	0.0
15:05	9.95	140	2.5	0.29	17.11	0.570	6.14	-61	0.0
15:15	9.70	140	2.9	0.30	19.10	0.558	6.11	-66	0.0
15:25	9.70	140	3.3	0.28	19.51	0.550	6.04	-65	0.0
15:30	9.71	140	3.5	0.27	19.51	0.552	6.04	-64	0.0
15:35	9.73	140	3.7	0.25	19.52	0.554	6.04	-63	0.0
15:40	9.70	140	4.0	0.28	19.50	0.554	6.04	-63	0.0

MW25-33

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA, Mod 537, 21 comp			NA	2X250mL	PLASTIC	1 25 ESE 2020	15:40	8/20/2020 EOA

COMMENTS: (QA/QC?)

- HDPE & Silicon tubing used

IDW INFORMATION:

- Flow in dumpster; GW on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 25-33

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 3/23/2021
INSPECTORS: DPC
PUMP #: 25ESI 24GS2
SAMPLE ID #: d

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
11:40	55	CLEAR	LOW	10	90	DRY

MONITORING INSTRUMENT	MONITORING DETECTOR
PID	Horiba
FIDS	Mastech Per.

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	14	4	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	4.63	5.52	—	11:25

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
11:25	4.63	150	0.0	5.71	15.84	0.435	6.46	53	OR
11:35	5.62	150	0.4	1.70	13.44	0.397	6.29	60	704
11:41	5.58	150	0.8	1.54	13.27	0.406	6.28	63	106
11:50	5.52	150	1.0	1.35	13.54	0.409	6.28	64	100
11:55	5.53	150	1.2	1.29	13.91	0.401	6.28	65	89.8
12:00	5.56	150	1.4	1.21	14.20	0.400	6.28	67	76.8
12:05	5.59	150	1.6	1.15	14.41	0.398	6.28	68	65.2
12:10	5.59	150	1.8	1.08	14.96	0.397	6.28	68	60.9
12:15	5.60	150	2.0	1.02	15.21	0.396	6.29	68	54.8
12:20	5.61	150	2.2	0.96	15.58	0.394	6.30	68	43.7
12:25	5.62	150	2.4	0.88	15.90	0.396	6.30	68	21.0
12:30	5.62	150	2.6	0.86	15.80	0.394	6.30	67	19.3
12:35	5.61	150	2.8	0.85	15.89	0.401	6.30	68	19.3
12:40	5.60	150	3.0	0.84	15.91	0.403	6.30	68	19.2
12:45	5.59	150	3.2	0.82	16.02	0.403	6.31	68	15.4
12:50	5.59	150	3.4	0.80	16.13	0.402	6.31	68	13.5
12:55	5.61	150	3.6	0.80	16.41	0.394	6.30	69	11.6
13:00	5.63	150	3.8	0.80	16.74	0.388	6.29	70	9.34
13:50	5.64	150	7.8	0.61	19.34	0.373	6.29	71	2.35
13:55	5.66	150	8.0	0.65	19.49	0.369	6.27	73	2.46
14:00	5.66	150	8.2	0.66	19.54	0.367	6.27	73	1.13

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-25D

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 3/23/2021
INSPECTORS: DPC
PUMP #: —
SAMPLE ID #: 25DGW2021

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
14:10	60	PARTLY CLOUDY	LOW	10	290	DRY	see page	1

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	14	4	10	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	0.0	4.63	5.52	—	11:25

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
14:05	5.66	150	8.4	0.66	19.81	0.373	6.27	73	88.3
14:10	5.67	150	8.6	0.65	20.13	0.377	6.28	72	165
14:15	5.60	150	8.8	0.62	20.71	0.366	6.29	72	29.8
14:20	5.59	150	9.0	0.62	20.80	0.366	6.28	72	15.2
14:25	5.58	150	9.2	0.61	20.68	0.365	6.27	72	126
14:30	5.55	150	9.4	0.63	20.61	0.363	6.26	74	168
14:35	5.48	150	9.6	0.67	20.19	0.363	6.25	75	6.44
14:40	5.50	150	9.8	0.67	20.35	0.364	6.28	75	4.45
15:05	5.68	150	10.4	1.69	13.27	0.479	6.73	82	55.8

MW25-33

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA 21 PARAMETER 1800 537			NA	2X250mL	HDPE	25ESI20052	1440	EOM/3-23-21

COMMENTS: (QA/QC?)

DUPLICATE 25ESI20056 COLLECTED AT 1455

- Cal. Equip Prior to sampling activity

IDW INFORMATION: PURGE WATER DUMPED ON THE GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-3AS

PROJECT: SENECA ARMY DEPOT
LOCATION: ROMULUS, NEW YORK
SEAD'25

DATE: 8/20/2020
INSPECTORS: J. Gelchtwait
PUMP #: 2288
SAMPLE ID #: 25ES12002

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1030	62	SUNNY	—	—	—	DRY

MONITORING INSTRUMENT	MONITORING DETECTOR
253335	152605
Peri pump	Horiba

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	~~XXX~~ 16	6.46	10	0.0	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	NA	9.75'	17.8	18	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS (umhos) cm)	pH	ORP (mV)	TURBIDITY (NTU)
PST 1100	9.75	220		1.21	19.14	0.573	7.14	14	409
1105	11.25	200		0.86	17.74	0.553	7.03	20	188
1110	11.875	170		0.77	17.90	0.536	7.00	22	135
1115	12.45	150		0.85	18.07	0.535	6.98	23	32.8
1120	13.00	140		0.94	18.21	0.531	6.97	22	34
1125	13.55	~~130~~ 135		1.19	18.68	0.532	6.94	22	14
1130	13.95	125		1.30	19.08	0.535	6.94	21	1.4
1135	14.4	120		1.30	19.5	0.539	6.94	21	0.0
1140	14.7	120		1.28	19.6	0.540	6.93	20	0.0
1145	15.05	120		1.13	20.03	0.545	6.90	17	0.0
1150	15.8	120		0.98	20.45	0.550	6.92	12	0.0
1155	16.05	120		0.93	20.76	0.549	6.92	11	0.0
1200	16.3	120		0.86	21.39	0.551	6.92	8	0.0
1205	16.8	120		0.73	22.19	0.540	6.93	10	0.0
1210	17.25	120		0.72	22.20	0.527	6.96	7	0.0
1215	17.6	120		0.68	22.93	0.524	6.96	5	0.0
1220	18.0	120		0.67	23.07	0.526	6.99	5	0.0
1225	—	120		0.70	23.9	0.525	6.92	11	0.0
		PUMPED DRY	3 GALLONS						
STATIC →	15.8								
START 0845	15.8	150	.025 gal	8.22	16.53	0.589	7.60	22	28.5
~~0850~~ 0900	18.0	150		5.23	17.05	0.600	7.14	39 ~~22~~	13.3

17.8' @ 2:52 pm
17.8' 3:18

sample time 0850 on 8/21/2020

20022

MW25-[illegible]

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFAS Mod 537 21 comp.			NA	2/250 mL	Poly	25SEP 2021	0850	EOA 10/5-20

COMMENTS: (QA/QC?)

- DTW did not recharge to 80% static DTW. collected sample. well slow yield.

- HDPE; Silicon tubing used

IDW INFORMATION:

-IDW in dumpster; set on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-34S

PROJECT: Seneca Army Depot
LOCATION: SEAD 25

DATE: 3/26/21
INSPECTORS: MA
PUMP #: No. 769
SAMPLE ID #: 25ESI20063

Pg 1 of 2

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0846	61	Partly cloudy	54	14	180	MOIST	Horiba U10	mech

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	18.4	6	10	NA	NA	NA

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	0.1	4.4	8.7	16.4	0905

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0910	5.8	200	.75	2.81	19.83	0.543	7.47	154	79.1
0915	6.2	100	.90	2.73	18.06	0.551	7.46	163	71.8
0920	6.4	100	1.00	2.61	17.91	0.558	7.45	169	63.8
0925	6.8	100	1.10	2.49	17.83	0.563	7.43	178	46.8
0930	7.0	100	1.20	2.35	17.79	0.567	7.40	185	21.4
0935	7.5	100	1.30	2.30	17.78	0.568	7.39	187	17.1
0940	8.1	100	1.40	2.27	17.76	0.569	7.38	190	15.4
0945	8.1	100	1.50	2.22	17.75	0.571	7.36	194	12.6
0950	8.6	100	1.80	2.17	17.83	0.569	7.31	196	18.6
0955	8.6	100	1.90	2.15	17.90	0.565	7.29	198	17.4
1000	8.6	100	2.00	2.10	17.96	0.563	7.28	199	15.3
1005	8.6	100	2.10	2.06	18.05	0.561	7.27	200	15.2
1010	8.6	101	2.20	2.03	18.16	0.561	7.27	200	14.6
1015	8.7	100	2.40	2.03	17.91	0.561	7.25	201	15.8
1020	8.8	101	2.50	2.03	17.60	0.561	7.24	203	16.2
1025	8.8	100	2.60	2.03	17.51	0.561	7.23	205	16.0
1030	8.9	100	2.80	2.02	17.48	0.561	7.23	208	16.5
1035	9.0	100	2.90	2.06	17.87	0.568	7.20	209	14.2
1040	9.0	101	3.10	2.06	16.90	6.570	7.18	210	12.8
1045	9.1	100	3.20	2.07	16.77	0.570	7.18	210	9.74
1050	9.1	100	3.40	2.07	16.80	0.570	7.18	210	10.76

1 of 3

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-34S

PROJECT: Seneca Army Depot
LOCATION: SEAD 25

DATE: 8/26/12
INSPECTORS: MA
PUMP #: A01769
SAMPLE ID #: 25ESI20053

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS
0846	61	Partly Cloudy	84	14	180	MOIST

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	Mech
PID	Conj

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	18.4	6	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	4.11	8.7	16.4	0965

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1055	8.9	100	3.50	2.07	16.90	0.572	7.18	2.06	10.91
1100	8.9	100	3.60	2.07	16.96	0.574	7.18	2.03	9.71
1105	8.9	100	3.70	2.08	17.04	0.577	7.18	2.02	8.72
1110	8.8	100	3.80	2.06	17.51	0.571	7.18	2.02	7.81
1115	8.8	100	3.90	2.03	17.92	0.569	7.18	2.02	6.66
1120	8.8	100	4.00	2.02	17.99	0.566	7.18	2.02	6.24
1125	8.7	100	4.10	2.02	18.06	0.566	7.18	2.02	5.99
7 Sample				4.10	18.59	0.514	7.49	1.92	6.71

MW 25-345

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA + 21 PFAS MOD 537			NONE	2/250	HDPE	25ESI2663	1130	MM 2/22/21

EDD/ 5-5-21

COMMENTS: (QA/QC?)

HORIBA, PD + Hach CALIBRATED
Hach USED FOR TURBIDITY LEVEL

IDW INFORMATION:

WATER DUMPED ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-34D

PROJECT: SENECA ARMY DEPOT
LOCATION: ROMULUS, NEW YORK
SEAP 25

DATE: 8/20/2020
INSPECTORS: JHG
PUMP #: 610272
SAMPLE ID #: 25ESI 20022

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1400	72	SUNNY	—	—	—	DRY	25335	15265
							Rae pump	Horiba

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = {(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)}

Grundfos Pump
Rae Lite

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	54'	44	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	NA	48.5'	53.7		

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mmhos) mS/cm	pH	ORP (mV)	TURBIDITY (NTU)
1410	48.5	300	4 Gallons	2.56	16.35	0.527	7.99	-34	291
1415	54.1	300		2.99	19.17	0.535	8.03	-35	302
	RAN	DRY							
STATIC 0915	53.85	STILL TOO LOW		BELOW 80% RECOVERY					
STATIC 0850	53.95'	on	8/24/2020	BELOW 80% RECOVERY					
STATIC 0800	53.7	on	8/28/2020	JHG					
8/31/20 1300		Collected via	bailler 2 - 250 ml plastic bottles						

13
54
48.5
5.5 ft

54.1 @ 3:18 pm

MW25-340

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOAs Mod 537			NA	2/250ml	Plastic	25ESI20082	1300	EGM 8/31/2020
	21 Compounds								

COMMENTS: (QA/QC?)

- Purged well dry and let recharge. Never recovered to 5% static DTW over week. Collected sample for analysis. Slow recharge

- HDPE; Silicon tubing used

IDW INFORMATION:

- IDW in dumpster; GW on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-340

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

DATE: 3/31/21
INSPECTORS: NH KM
PUMP #: 24743
SAMPLE ID #: 25ESI2054

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0811	52	CLOUDY	63	10	180	DRY

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	Hach
PID	Rae

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	54.0	44	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	38.5	52.55	53.0	0815

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0945	48.3	300	.75	4.65	11.18	0.978	10.20	18	780
1015	45.6	120	1.00	2.40	11.22	0.980	10.18	-17	371 272
1025	47.3	120	2.00	1.37	9.75	1.01	10.28	-60	167
1035	48.02	120	2.50	1.37	9.52	1.00	10.31	-88	130
1040	48.35	120	2.75	1.40	9.35	1.00	10.20	-92	109
1045	48.8	120	2.85	1.39	9.29	1.00	10.26	-96	133
1050	49.49	120	3.00	1.42	9.42	1.00	10.25	-101	116
1055	50.03	120	3.25	1.51	9.42	0.994	10.24	-101	104
1100	50.6	120	3.50	1.65	9.40	0.988	10.21	-100	92.6
1105	51.2	120	3.75	1.80	9.40	0.981	10.19	-97	97.7
1210	51.10	120		4.48	8.80	0.960	10.18	-93	87.5
1215	51.93	120		2.51	9.07	0.925	10.12	-92	64.9
1220	52.55	120		1.70	9.21	0.873	10.02	-89	45.0
Final				1.37	9.32	0.816	9.95	-65	48.7

MW 25-340

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
PFOA + 21 PCM MOD 537	NONE	2/250	HDPE	25ESTJW54	1225	~~[illegible]~~ 8/31/21

EOM 56-2

COMMENTS: (QA/QC?)

CALABRATED HORIBA

USED HACH FOR TURBIDITY

IDW INFORMATION:

Water DUMPED ON GROUND

SEAD-26
Groundwater Sampling Logs

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 26-12

PROJECT: SEDA
LOCATION: SEAD 26-12

DATE: 5/30/19
INSPECTORS: —
PUMP #: 042484
SAMPLE ID #: 26ES12000 1

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0.-360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1415	61	Cloudy	72	6	0	Dry	Horiba U52	ORP, pH,

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	~~0~~ 5'	0'	8'	23.9	7.60	0.590

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	4.69'-4.75'	—	11.23-11.03	1425

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
14:25 0	4.69	400	—	8.10	13.40	0.626	7.28	130	250
5	5.54	240	0.5	6.42	12.62	0.616	7.07	166	19.2
10	5.73	220	0.8	6.16	12.82	0.600	6.93	186	10.6
15	5.95	220	1.1	5.72	13.01	0.601	6.85	200	9.2
20	6.15	200	1.4	5.21	13.43	0.605	6.83	208	45.3
25	6.34	200	1.8	5.32	13.47	0.608	6.82	210	51.4
30	6.56	200	2.3	5.14	13.38	0.615	6.80	212	32.3
15:00 to 15:20 35	6.77	180	2.5	4.86	13.55	0.629	6.79	212	36.0
~~40~~ 55	7.65	300	2.8	4.59	13.84	0.648	6.79	211	24.7
~~45~~ 60	8.09	260	3.0	4.11	12.80	0.655	6.79	213	12.9
~~60~~ 65	8.40	200	3.2	4.20	12.90	0.637	6.81	215	15.0
~~65~~ 70	8.67	200	3.4	4.41	12.88	0.637	6.88	216	15.2
~~70~~ 75	8.83	200	3.8	4.53	12.96	0.648	6.92	216	12.6
80	9.48	200	4.1	3.86	12.84	0.668	6.96	216	30.2
85	9.57	160	4.3	3.48	13.31	0.672	6.98	213	53.8
90	10.38	160	4.5	2.90	13.41	0.665	6.99	210	423
95	11.03	150	4.6	3.33	13.99	0.661	6.99	208	575
100	11.29	160	4.7	3.58	13.73	0.656	6.99	207	551
105	11.83	160	5.0	4.12	13.41	0.644	7.01	205	>1000
5/31/19 0	5.05	275	—	7.17	15.05	0.607	7.73	127	268
5	5.65	275	.20	5.80	14.48	0.609	7.17	156	51.3

Shut down @ 16:15 5/30/19

26 - 12

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	None	2	PFAS	26ES120601	1150	5/31/19

A. Colvin

COMMENTS: (QA/QC?)

Attempted to Sample on 5/30/19, Turbidity Spiked and well ran dry. tried again 5/31/19.

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 26-12

PROJECT: SEDA
LOCATION: SEAD 26-12

DATE: 5/31/19
INSPECTORS:
PUMP #: QL2484
SAMPLE ID #: 26ES12ccccl

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1115	62	Sunny	69	3	180	Dry	Horiba U52	pH, orp ck

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA						
	6.0	0 ±	8 ±			
	PID READING (OPENING WELL)	**DEPTH TO STATIC WATER LEVEL (TOC)**		**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
DATA COLLECTED AT WELL SITE						
	-	4.75			11.03'	1115
	PUMP PRIOR TO SAMPLING (cps)			**PUMP AFTER SAMPLING (cps)**		
RADIATION SCREENING DATA						

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10	5.91	250	0.40	5.77	14.03	0.602	7.03	164	33.3
15	6.12	250	0.50	5.53	14.13	0.602	6.96	174	23.4
20	6.61	250	1	5.26	14.31	0.597	6.88	184	13.8
25	6.87	250	1.50	5.23	14.40	0.598	6.87	187	11.0
30	7.16	250	2	5.06	14.45	0.599	6.86	190	8.7
35	7.70	250	2.5	4.92	14.67	0.603	6.84	193	8.7
40	7.81	250	3	3.89	14.57	0.599	6.85	196	8.8

26-12

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT	BOTTLES VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	none	2		PFAS	26ES120001	1150	5/31/19 AT

COMMENTS: (QA/QC?)

Second attempt at Sampling, turbidity Stabilized w 8 NTU.

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-12

PROJECT: SENECA army DEPOT
LOCATION: SEA026

DATE: 3/25/2021
INSPECTORS: DPC
PUMP #: 034797
SAMPLE ID #: 26ES12003

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0-360)	GROUND / SITE SURFACE CONDITIONS
14:10	60	CLEAR	MOD	10	150	DRY/ROCKY

MONITORING

INSTRUMENT	DETECTOR
HORIBA U-52	pH
SKINNY DIPPER	T

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(TOTAL WELL DEPTH - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.34

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	13.00	5	8	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	4.49	7.11	12	14:10

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	—		—	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
14:10	4.49	150	0.0	1.85	23.05	0.571	6.93	100	94.4
14:20	5.54	150	0.4	1.91	16.64	0.577	6.51	113	10.2
14:30	5.51	150	0.8	1.93	15.65	0.554	6.46	112	8.04
14:35	5.55	150	1.0	2.00	15.63	0.556	6.45	111	8.23
14:40	5.58	150	1.2	2.09	15.61	0.557	6.43	110	5.76
14:45	5.51	150	1.4	2.0	16.35	0.586	6.41	108	6.82
14:50	5.56	150	1.6	2.14	15.91	0.588	6.40	108	7.03
14:55	5.60	150	1.8	2.26	15.20	0.570	6.39	107	7.41
15:00	5.64	150	2.0	2.32	14.55	0.573	6.38	107	7.76
15:05	5.81	150	2.2	2.28	14.09	0.579	6.37	107	6.11
15:10	5.85	150	2.4	2.54	13.23	0.598	6.35	109	6.26
15:15	6.00	150	2.6	2.71	12.88	0.601	6.35	108	5.16
15:20	6.25	150	2.8	2.82	12.21	0.606	6.34	108	4.90
15:25	6.32	150	3.0	2.82	12.77	0.601	6.34	107	4.24
15:30	6.39	150	3.2	2.81	13.01	0.595	6.34	107	3.97
15:35	6.48	150	3.4	2.76	13.08	0.602	6.35	107	1.60
15:40	6.76	150	3.6	2.85	12.24	0.595	6.35	107	3.16
15:45	6.80	150	3.8	2.70	13.70	0.591	6.35	107	2.87
15:50	6.85	150	4.0	2.57	14.35	0.587	6.35	106	2.35
15:55	6.98	150	4.2	2.57	13.81	0.589	6.37	106	2.30
16:00	7.11	150	4.4	2.56	13.49	0.591	6.37	106	2.26
16:15	7.41	150	5.0	1.65	16.88	0.559	6.54	106	18.0

MW 26.12

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA 21 PARAMETER MOD 537			NA	2X250mL	HDPE	25ES12031	1600	EDM 5-5-21

COMMENTS: (QA/QC?)

EB SEDA PFAS 00006 COLLECTED AT 15:55

Equip Cal. prior to use.

IDW INFORMATION:

PURGE WATER DUMPED ON THE GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 626-13

PROJECT: SEDA
LOCATION: SEAD 26-13

DATE: 5/30/19
INSPECTORS: , -
PUMP #: 042340
SAMPLE ID #: 26ES12002

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1530	-	Partly cloudy	-	-	-	Dry	Horiba U-52	pH, ORP, DO

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	51'	0.0	88	7.8'	7.57'	0.958

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	-	7.50	11.51'	10.54	1540

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	9.12	-	-	3.92	12.08	0.848	6.47	138	340
5	9.50	200	.33	3.75	13.33	0.844	6.35	162	12.4
10	10.54	125	0.45	3.68	13.02	0.872	6.32	172	238
15	10.54	125	0.50	3.33	13.05	0.870	6.32	171	406
20	10.61	350	0.60	2.37	14.34	0.851	6.27	173	549
25	11.42	75	0.75	1.64	14.30	0.845	6.27	171	245
30	11.50	90	0.80	2.34	14.01	0.847	6.28	172	463
35	11.35	75	1.20	4.21	15.22	0.848	6.31	184	298
40	11.52	75	1.50	4.75	15.66	0.848	6.34	191	221
45	11.50	75	1.65	4.97	16.18	0.846	6.35	199	128
50	11.50	75	1.75	5.07	16.37	0.843	6.35	-12	72.7
55	11.50	75	2	5.15	16.25	0.846	6.34	-11	39.6
60	11.50	75	2.25	5.14	16.38	0.843	6.34	-12	26.6
65	11.51	60	2.30	5.05	16.37	0.838	6.35	-12	7.1
70	11.51	60	2.5	5.04	16.21	0.840	6.32	-10	0.9

7/6-13

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT	BOTTLES VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	None	2		PFAS	26FB12a0L2	1645	5/8/19 A. Cook

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: NW 26-13

PROJECT: SEAD 26
LOCATION: Romulus, NY

DATE: 3/25/21
INSPECTORS: KM
PUMP #: 18212
SAMPLE ID #: 26EST20032

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1200	65°F	—	—	—	—	Dry	Mini RAE 3000	Rae
							Hach	Hydrolab

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
0.74654

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	12.33	8	5	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	~~7.80~~ 7.75	9.35	10.33	1208

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA			NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	7.95	150	0	3.26	21.70	0.896	5.31	23	35.4
10	8.31	150	0.4	0.77	14.24	0.939	6.66	-202	8.07
20	8.46	150	0.8	0.71	14.65	0.944	6.69	-201	9.10
30	8.65	150	1.2	0.63	15.02	0.938	6.70	-200	9.49
35	8.73	150	1.4	0.62	15.32	0.933	6.70	-199	9.82
40	8.82	150	1.6	0.57	15.78	0.922	6.71	-197	8.70
45	8.92	150	1.8	0.50	17.29	0.889	6.72	-197	8.82
50	9.00	150	2.0	0.49	17.63	0.885	6.71	-197	9.60
55	9.12	150	2.2	0.51	17.87	0.895	6.73	-198	9.25
60	9.21	150	2.4	0.49	17.83	0.883	6.75	-198	8.17
65	9.30	150	2.6	0.45	17.89	0.875	6.75	-198	8.69
70	9.35	150	2.8	0.44	18.16	0.883	6.74	-196	7.98
Final				0.212	19.58	0.877	6.93	-191	6.32

MW26-13

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOAS. mod 537, 21 components			None	2/250 mL	HDPE	26ESI20032	1325	EOM/5-5-24

COMMENTS: (QA/QC?)

Peri pump + HDPE tubing

Equipment calibrated before use

IDW INFORMATION:

water dumped on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 26-14

PROJECT: Seneca Army Depot
LOCATION: SEAD 26-14

DATE: 5/31/19
INSPECTORS: R. Inclima
PUMP #: 042340
SAMPLE ID #: 26ES120003

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
10:45	67°	Sunny/partly cloudy	63%	8 mph	NW (315)	Dry	Horiba U-52	pH, DO, ORP etc

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	0-05'	0	10'	45.3	7.11	1.09

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	~	10.24'	11.71'	12.43'	10:50

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)	
0	10.86	260	—	3.42	18.56	0.847	6.86	138	>1000	
5	11.31	280	0.3	2.50	18.15	0.824	6.70	159	439	
10	11.56	200	0.6	2.50	18.15	0.822	6.36	187	161	
15	11.76	200	0.9	2.32	18.31	0.828	6.45	189	96.6	
20	11.96	200	1.2	2.17	18.54	0.830	6.53	176	58.4	
25	12.14	220	1.5	1.97	19.00	0.822	6.16	212	42.8	
30	12.38	200	2.0	1.42	19.39	0.812	6.49	196	119	
35	12.53	200	2.3	1.30	19.60	0.793	6.52	193	>1000	12:53 - Started pump again
—	10.86		2.3	0.86	26.62	0.860	6.69	199	272	
40	11.71		2.6	0.88	25.79	0.738	6.44	220	199*	

11:28 — Stopped pumping to let well recharge

13:05 - Sampled water

11:42 - water up to 12'
12:03 - water up to 11.50'
1239 - water at 11'
12:51 - water @ 10.86'

26-14

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE	
					COUNT VOLUME	TYPE				
				None	2	PFAS	26B1L0063	1312	5/31/19	A.Cook

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-14
PROJECT: Seneca Army Depot - SEAD 26 LOCATION: Romulus, NY		DATE: 3/25/21 INSPECTORS: R Inclima PUMP #: 2288 SAMPLE ID #: 26ESI20033

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
~~N~~ 1347	71°F	Sunny	44%	11 mph	SW	dry

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	PID
Turbidimeter	Heron

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

1 well volume = 0.61 gal

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	14.05'	5	10	N/A	N/A	N/A
	PID READING (OPENING WELL)	**DEPTH TO STATIC WATER LEVEL (TOC)**		**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
DATA COLLECTED AT WELL SITE	0.0 ppm	10.31'		11.81	~13'	1415
	PUMP PRIOR TO SAMPLING (cps)			**PUMP AFTER SAMPLING (cps)**		
RADIATION SCREENING DATA	N/A			N/A		

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
5	10.63	100	0.13	1.85	20.57	0.962	6.82	104	249
10	10.77	100	0.26	1.92	19.54	0.973	6.62	120	133
20	10.91	100	0.52	2.05	18.96	0.981	6.46	136	45.8
25	11.00	100	0.65	2.34	18.42	0.987	6.42	141	26.7
30	11.36	100	0.78	2.33	16.81	0.999	6.35	151	6.55
45	11.48	100	1.18	2.11	17.40	0.991	6.35	152	4.53
50	11.55	100	1.31	1.86	17.94	0.988	6.32	153	4.37
55	11.61	100	1.44	1.84	18.12	0.985	6.32	154	4.34
60	11.64	100	1.57	1.64	18.58	0.974	6.31	154	4.37
65	11.68	90	1.69	1.46	18.66	0.975	6.29	155	3.33
70	11.73	90	1.81	1.35	19.12	0.972	6.30	155	3.38
75	11.80	90	1.93	1.26	19.25	0.972	6.29	155	2.41
80	11.80	90	2.05	1.20	19.30	0.974	6.29	154	4.07
85	11.81	100	2.18	~~1.20~~ 1.18	18.86	0.974	6.28	155	3.99
Post-Sample –	12.03	100	2.5	1.55	19.87	0.952	6.58	150	5.60

MW26-14

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
	PFOA, Mod 537, + 21 compounds			-	2/250mL	HDPE	26ESE00033	1545	BDM/5-5-21

COMMENTS: (QA/QC?)

PID Headspace:

- Sampling using peri pump & HDPE tubing

All equipment calibrated (see MW26-26 sampling log comments)

IDW INFORMATION:

- Waste water dumped on ground.
- PPE, tubing, solid waste in dumpster.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 26-15

PROJECT: SEDA
LOCATION: SEAD 26-15

DATE: 5/31/19
INSPECTORS: —
PUMP #: —
SAMPLE ID #: 26ES120004

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1345	70	Sunny	57	9	180	DM	Horiba U52	pH, ORP, DO etc

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	~~0~~ 5'	0'	5'	8.1	7.12	1.00

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	4.34'	4.42'	7.88'	1350

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	4.34	350	—	22.4	7.06	0.767	6.61	148	78.3
5	4.38	350	.5	5.41	18.70	0.818	6.43	164	0.0
10	4.41	350	1	5.02	13.72	0.819	6.33	169	0.0
15	4.41	400	1.875	4.56	13.00	0.829	6.34	176	0.0
20	4.41	400	2.25	4.36	12.90	0.830	6.33	178	0.0
25	4.42	400	2.75	4.05	12.85	0.833	6.31	183	0.0

1425

2615

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE	
	none	2	PFAS	26E5170004	1435	5/31/19	A. Cook
	none	2	PFAS	26E5170004MS	1440	5/31/19	A Cook
	none	2	PFAS	26E5170004MSD	1445	5/31/19	A-Cook

COMMENTS: (QA/QC?)

MS/MSD collected here

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-15
PROJECT: Seneca Army Depot		DATE: 3/26/24
LOCATION: SEAD 26		INSPECTORS: MA
		PUMP #: MP1769
		SAMPLE ID #: 26ES120034

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1220	61	MOSTLY CLOUDY	59	20	225	DRY	HORIBA	hach
							PID	pen

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	4.9	5	~~10~~ 5	NA	NA	NA
DATA COLLECTED AT WELL SITE	**PID READING (OPENING WELL)**	**DEPTH TO STATIC WATER LEVEL (TOC)**	**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**	
	0.0	3.2	3.3	8.0	1240	
RADIATION SCREENING DATA	**PUMP PRIOR TO SAMPLING (cps)**		**PUMP AFTER SAMPLING (cps)**			
		NA		NA		

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1245	3.3	150	.30	1912	11.37	0.713	6.90	183	78.6
1250	3.3	100	.50	12.66	11.34	0.721	6.81	190	54.1
1255	3.3	100	.75	4.82	11.34	0.733	6.75	197	26.7
1300	3.3	100	1.00	4.60	11.24	0.738	6.79	200	19.6
1305	3.3	100	1.25	4.24	11.03	0.741	6.80	204	12.4
1310	3.3	100	1.50	4.16	10.99	0.742	6.81	215	10.9
1315	3.3	100	1.75	4.09	10.93	0.743	6.81	206	7.24
1320	3.3	100	2.00	4.01	10.90	0.749	6.80	209	7.02
1325	3.3	100	2.25	3.94	11.83	0.754	6.79	210	6.56
1330	3.3	100	2.50	3.90	10.81	0.757	6.79	211	6.38
1335	3.3	100	2.75	3.82	10.81	0.756	6.81	213	5.61
1340	3.3	100	3.00	3.80	10.82	0.756	6.81	214	5.03
1345	3.3	100	3.25	3.74	10.85	0.755	6.82	215	4.83
1350	3.3	100	3.50	3.65	10.85	0.755	6.82	215	4.48
1355	3.3	100	3.75	3.49	11.03	0.755	6.82	218	5.69
1400	3.3	100	4.00	3.26	11.40	0.758	6.81	218	8.76
1405	3.3	100	4.20	3.11	11.81	0.751	6.81	2.19	9.19
1410	3.3	100	4.30	3.59	10.4	0.754	6.83	220	6.20
1415	3.3	100	4.50	3.72	9.89	0.754	6.84	222	5.19
1420	3.3	100	4.75	3.70	9.71	0.754	6.80	223	5.08
1425	3.3	100		3.68	9.53	0.758	6.80	225	4.84

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 26-15

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

DATE: 3/26/21
INSPECTORS: MMS
PUMP #: A01769
SAMPLE ID #: 26ES20034

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1220	61	Mostly Cloudy	59	20	225	Dry

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	Hach
PID	Rae

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	9.9	5	10	NA	NA	NA
	PID READING (OPENING WELL)	**DEPTH TO STATIC WATER LEVEL (TOC)**	**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**	
DATA COLLECTED AT WELL SITE	0.0	3.2	3.3	8.0	1240	
	PUMP PRIOR TO SAMPLING (cps)		**PUMP AFTER SAMPLING (cps)**			
RADIATION SCREENING DATA	NA			NA		

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1430	3.3	100	5 U	3.65	9.45	0.761	6.30	225	6.22
1435									
1440									
1445									
7	SAMPLE			5.37	1145	0.763	7.30	211	7.11

MW 26-15 3 of 3

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	EPA + 2 Preps NO 537			NONE	2/28	HDPE	26ESE240324	1430	NA 3/24/21

EOM / 5.3.21

COMMENTS: (QA/QC?)

CALIBRATED HORIBA, PID + Hach

Hach USED FOR TURBIDITY

IDW INFORMATION:

PUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 26-16

PROJECT: SEDA
LOCATION: SEAD 26 - 16

DATE: 5/31/19
INSPECTORS: R. Inclima
PUMP #: 042340
SAMPLE ID #:

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
14:00	67 °F	Sunny	59%	10 mph	NNW (337.5)	Damp	Horiba U-52	pH, ORP, DO

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = {(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)}

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	~~5'~~	0'	5'	80.3	6.95'	0.889
	DEPTH TO POINT OF WELL (TOC)	**DEPTH TO TOP OF SCREEN (TOC)**		**WELL DEVELOPMENT TURBIDITY**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)		
	-	2.39'		2.52'	7.43'	14:03
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)		

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED 10% OXYGEN (mg/L)	TEMP 1 (C)	SPEC. COND 3% (umhos)	0.2 pH	ORP 20 mV (mV)	TURBIDITY 10% (NTU)
0	2.50	360	-	6.21	19.07	0.756	4.99	97	94.5
5	2.50	300	0.3	1.47	15.89	0.806	3.60	135	44.8
10	2.51	300	0.7	1.04	14.26	0.829	2.64	148	7.6
15	2.52	300	1.2	0.78	13.80	0.834	1.81	155	4.1
20	2.52	300	1.5	0.61	13.56	0.836	1.05	160	3.6
25	2.52	300	2.0	0.47	13.46	0.837	0.34	164	3.7
30	2.52	300	2.4	0.40	13.37	0.837	0.00	166	3.8

14:38 - Sampled

26-16

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	none	2	PFAS	26ES120005	1500	5/31/19
	none	2	PFAS	26ES120007	1505	5/31/19

COMMENTS: (QA/QC?)

Field Dupe Collected here

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-16

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

DATE: 3/29/21
INSPECTORS: MH
PUMP #: AQ1769
SAMPLE ID #: 26EST20035 ~~26EST20038~~

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0822	34	CLOUDY	69	18	315	MOIST	HORIBA	NACH
							PID	Rae

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	9.3	5	~~10~~ 5	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	1.3	1.5	7.3	0835

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0840	1.3	100	.10	4.76	6.92	0.703	6.56	167	84.6
0845	1.3	100	.30	4.60	6.90	0.690	6.71	179	70.1
0850	1.4	100	.40	4.51	6.89	0.683	6.83	193	63.5
0855	1.4	100	.60	4.46	6.88	0.680	6.95	200	62.1
0900	1.4	100	.70	4.44	6.62	0.681	6.98	206	29.9
0905	1.4	100	.80	4.42	6.57	0.682	6.99	214	27.7
0910	1.4	100	1.00	4.41	6.52	0.682	7.01	216	26.7
0915	1.4	100	1.20	4.29	6.43	0.688	6.90	218	10.51
0920	1.4	100	1.40	4.19	6.31	0.691	6.83	224	8.23
0925	1.4	100	1.60	4.13	6.26	0.694	6.82	226	4.87
0930	1.4	100	1.80	4.10	6.21	0.696	6.82	230	3.01
0935	1.4	100	2.00	4.09	6.13	0.697	6.81	232	2.96
0940	1.4	100	2.20	4.03	6.04	0.698	6.81	233	1.56
0945	1.4	100	2.50	4.00	6.07	0.699	6.81	234	1.97
0950	1.5	100	2.70	3.96	6.18	0.700	6.82	237	1.62
0955	1.5	100	3.00	3.92	6.09	0.700	6.83	238	1.79
1000									
> SAMPLE				4.16	6.12	0.693	6.81	234	4.66

MW26-16

SAMPLING ORDER		PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
				COUNT/ VOLUME	TYPE			
	PFOA 1,2,PFAM MOD 537		NONE	2/250	HPDE	26ESI0035	1005	MM 3/07/24 EQM / SCS
	↓	↓	↓	↓	↓	2668 2035	1225	

COMMENTS: (QA/QC?)

CALIBRATED HORIBA, PID + HACH

USING HACH TO READ TURBIDITY

IDW INFORMATION:

DUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 26-17

PROJECT: SEDA
LOCATION: SEAD 26-17

DATE: 5/31/19
INSPECTORS: R. Inclima
PUMP #: 042340
SAMPLE ID #:

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
15:45	71°F	Sunny	57%	8 mph	NNW (337.5)	Damp	Horiba U-52	pH, ORP, DO etc

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	5'	0.0'	5'	>1000	7.06	0.618

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	-	3.46'	~~6.87'~~ 3.75'	6.87'	15:52

	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
RADIATION SCREENING DATA				

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND 3% (umhos)	0.2 pH	ORP 20 (mV)	TURBIDITY 10% (NTU)
0	3.76	300	—	3.20	20.71	0.656	7.25	96	>1000
5	3.74	300	0.4	0.21	14.74	0.636	6.79	106	157
10	3.75	300	0.8	0.00	13.96	0.644	6.75	121	53.8
15	3.75	300	1.3	0.00	13.48	0.651	6.74	130	26.6
20	3.75	300	1.8	0.00	13.29	0.655	6.74	134	15.1
25	3.75	300	2.3	0.00	12.98	0.659	6.75	137	11.9
30	3.75	300	2.6	0.00	13.03	0.657	6.75	139	10.5
35	3.75	300	2.9	0.00	12.88	0.659	6.76	140	8.5
40	3.75	300	3.2	0.00	12.87	0.657	6.76	140	9.7
45	3.75	300	3.7	0.00	12.63	0.658	6.76	140	8.3
50	3.75	300	4.0	0.00	12.80	0.655	6.76	141	7.4
55	3.75	300	4.3	0.00	12.61	0.657	6.76	141	7.3
60	3.75	300	4.5	0.00	12.80	0.656	6.76	141	7.3

16:53 - Sampled water

26-17

SAMPLING ORDER	PRESERVATIVES	BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
		COUNT VOLUME	TYPE			
	NONE	2	PFAS	26ES1700dc	1645	5/31/19

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-17

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

DATE: 3/29/21
INSPECTORS: MH
PUMP #: A&1769
SAMPLE ID #: 26GSI200326

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1025	36	CLOUDY	61	17	315	MOIST

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	HACH
PID	Rae

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	8.7	5	5 ~~10~~	NA	NA	NA
	PID READING (OPENING WELL)	**DEPTH TO STATIC WATER LEVEL (TOC)**		**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
DATA COLLECTED AT WELL SITE	0.0	3.2		3.3	7.10	1045
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	NA		PUMP AFTER SAMPLING (cps)	NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1050	3.2	100	.20	6.10	7.01	0.3.81	6.80	62	321
1055	3.2	100	.40	5.82	7.06	0.3.94	6.82	69	116
1100	3.3	100	.60	5.36	7.29	0.3.99	6.89	69	67.8
1105	3.3	100	.80	5.02	7.36	0.4.03	6.91	73	52.4
1110	3.3	100	1.00	4.96	7.40	0.406	6.92	76	43.6
1115	3.4	100	1.25	4.63	7.88	0.407	6.90	77	21.0
1120	3.4	100	1.50	4.46	8.08	0.408	6.90	79	12.3
1125	3.3	100	1.70	4.32	8.42	0.408	6.90	86	16.1
1130	3.3	100	1.90	4.31	8.61	0.408	6.90	92	15.6
1135	3.3	100	2.10	4.23	9.03	0.408	6.91	102	15.3
1140	3.3	100	2.40	4.16	9.14	0.408	6.91	109	14.1
1145	3.3	100	2.60	4.12	9.19	0.406	6.90	111	10.6
1150	3.3	100	2.80	4.06	9.20	0.404	6.91	116	8.24
1155	3.3	100	3.0	3.99	9.23	0.402	6.90	117	7.90
1200	3.3	100	3.20	3.94	9.27	0.402	6.90	117	6.14
1205	3.3	100	3.50	3.96	9.23	0.403	6.90	112	7.20
1210	3.3	100	3.70	3.96	9.19	0.403	6.88	109	7.99
1215	3.3	100	3.90	3.98	9.17	0.405	6.88	102	8.64
1220									
1225		SAMPLE		4.02	7.51	0.402	6.87	118	5.54

MW26-17

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
PFOA + 21 PARAM MOD 537	NONE	2/250	HPDE	26ESI20036	1220	MAA 3/29/21 EDA
DUPE PFOA + 21 PARAM MOD 537	NONE	2/250	HPDE	26ESI20058	1225	MAA 3/29/21 SJA

COMMENTS: (QA/QC?)

CALABRATED HORIBA, PID + HACH

HACH USED FOR TURBIDITY

IDW INFORMATION:

DUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL # MW26-18

PROJECT: Seneca Army Depot
LOCATION: Romulus, New York

DATE: 10/17/18
INSPECTORS: FM/SM
PUMP #: 10738
SAMPLE ID #: 26EST108

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1043	47	rain	92%	19mph	W	wet

MONITORING INSTRUMENT	DETECTOR
~~Horiba U-52~~ YSI Pro Plus	41755
~~YSI~~ HACH 2100Q	03A981

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
≈1.2 gal

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY NTU	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND uS/cm
HISTORIC DATA	*15	5	10	55.0	7.09	600

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	6.04	9.42	10*	1101

Measured 10/16 13:19

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)	
1102	6.73	200		12.56	13.1	5064	6.74	173.5	2.82	
1107	7.23	200		12.16	13.2	493.9	6.91	154.0	2.63	
1112	8.07	200		11.43	13.3	484.9	6.99	150.3	3.94	
1117	8.70	200		11.38	13.4	486.6	6.99	151.4	3.80	
1122	9.24	200		11.08	13.4	495.1	7.00	150.8	21.2	
1127	9.38	125		11.58	13.0	5788	7.01	155.2	19.6	← Switch Pumps
1132	10.51	125		10.51	12.4	580.5	6.92	154.4	19.0	
1137	9.46	125		8.01	12.1	6556	6.81	155.1	7.77	
1142	7.46	80		5.80	12.3	684	6.86	140.6	3.05	
1147	9.42	80		5.32	12.1	1707	6.87	147.5	3.13	

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/
					COUNT/ VOLUME	TYPE			DATE
1				—	2x250 mL	PFAS	36ESI20008	1150	JM 10/17
1					2x250 mL	PFAS	36ESI01004	1150	JM 10/17

COMMENTS: (QA/QC?)

Field Blank (36ESI01004) Collected

Grab sample was obtained from well on 10/15/19. Discarded on 10/17/19, since low flow was possible & obtained new sample

* at ~1130, adjusted tubing intake from 10 ft to 11 ft due to drawdown.

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-18

PROJECT: SEAD 26
LOCATION: ROMULUS, NY

DATE: 3/29/21
INSPECTORS: KM
PUMP #: 18212
SAMPLE ID #: 26ESL20037

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1140	40°F	Sunny	—	—	—	Dry

MONITORING INSTRUMENT	MONITORING DETECTOR
Mini RAE 3000	pid
Horiba	Hach

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.44907

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	13.94	5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	5.05	10.04	12.44	1152

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	5.76	200	0	10.87	8.78	0.450	7.38	124	27.8
10	6.95	160	0.4	6.77	8.49	0.448	7.03	131	22.6
20	7.50	140	0.8	6.34	8.96	0.449	6.97	132	19.7
30	7.94	140	1.2	5.81	9.37	0.449	6.96	131	18.1
35	8.16	140	1.4	5.43	9.57	0.449	6.960	131	13.6
40	8.36	140	1.6	5.28	9.76	0.448	6.95	131	16.4
45	8.58	140	1.8	5.05	9.98	0.448	6.95	130	18.3
50	8.78	140	2.0	4.88	10.25	0.448	6.94	130	18.0
55	9.03	140	2.2	4.79	10.52	0.446	6.94	130	16.1
60	9.14	140	2.4	4.59	10.63	0.444	6.94	130	13.4
65	9.32	140	2.6	4.14	10.75	0.443	6.93	129	11.1
70	9.54	140	2.8	3.94	10.86	0.442	6.92	128	8.83
75	9.67	140	3.0	3.71	10.97	0.443	6.92	127	7.87
80	9.91	140	3.2	3.54	11.09	0.441	6.92	126	7.86
85	10.04	140	3.4	3.44	11.15	0.441	6.91	125	7.71
Final				4.09	12.33	0.521	7.16	124	10.6

MW 26-18

SAMPLING ORDER	PRESERVATIVES	BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
		COUNT/ VOLUME	TYPE			
PFOAs Mod 537 + 21 components	None	2/250 mL	HDPE	26ESI20037	1330	EDM/5-5-24

COMMENTS: (QA/QC?)

Peri pump + HDPE tubing

Equip cal. prior to use.

IDW INFORMATION:

Water dumped on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-19

PROJECT: SEAD
LOCATION: MW26-19
SEAD 26

DATE: 8/19/2020
INSPECTORS: DPC, JG
PUMP #: 2288
SAMPLE ID #: 2GEST20013
08:15

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
09:10	80	LT BREEZE	HIGH	5	100	DRY, VEG

MONITORING

INSTRUMENT	DETECTOR
043836	043835
044681	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
TD: 17.62
Peristaltic pump, Hydrasleeve

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	15	5	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	9.93	16.24	17.62	09:00

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
09:00	9.93	200	0	9.45	24.96	0.573	5.80	45	0.0
09:10	13.33	200	0.5	5.62	15.99	0.609	6.56	96	0.1
09:20	14.45	200	1.0	5.39	16.17	0.614	6.65	101	2.0
09:30	15.41	200	1.3	4.77	16.45	0.629	6.78	94	0.0
09:40	PURGED DRY TO 17.62								
8/20/20 0925	16.86	WATER LEVEL NOT 80% FULL							
8/21/20 08:35	16.24			6.10	16.37	0.706	5.30	70	0.0

MW26-19

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA, PFOS			NA	2X250mL	PLASTIC	+	08:15	8/24/2020 EQA
	537.1						26ESI 20013		
	comp								

COMMENTS: (QA/QC?)

COLLECT SAMPLE 26ESI20013 @ 08:15

- HDPE; Silicon tubing used

IDW INFORMATION:

- IDW in dumpster; gw on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-19

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

DATE: 3/29/21
INSPECTORS: NH
PUMP #: A01769
SAMPLE ID #: 26EGE20038

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1343	43	PARTLY CLOUDY	47	16	315	DRY	HORIBA	Hach
							PID	Rae

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	17.7	5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	6.3	10.7	15.7	1345

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1350	6.9	150	.20	5.06	12.89	0.827	7.38	187	8.93
1355	7.3	100	.30	3.58	12.18	0.862	7.32	190	2.47
1400	7.5	75	.50	3.08	12.01	0.874	7.31	192	2.70
1405	7.6	100	.60	2.93	11.91	0.881	7.32	193	3.62
1410	7.8	100	.70	2.77	11.85	0.893	7.32	193	2.44
1415	8.0	100	.80	2.63	11.79	0.908	7.34	193	2.51
1420	8.4	100	1.00	2.58	11.73	0.912	7.34	193	2.88
1425	8.7	100	1.20	2.49	11.81	0.922	7.35	193	5.92
1430	9.2	100	1.40	2.44	12.20	0.931	7.34	194	7.37
1435	9.7	100	1.60	2.35	12.32	0.923	7.33	196	8.33
1440	10.0	100	1.80	2.33	12.16	0.921	7.33	197	5.24
1445									
1450									
1455									
1500									
	10.7								
⇒	SAMPLE			2.82	NA 13	0.873	7.50	183	

MW 26-19

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFAS + 21 Analytes MOD 537			NONE	2/250	HDPE	26ESI20358	1500	MAJ 3/29/21

EDM 5-5-21

COMMENTS: (QA/QC?)

CAMBERA HEXANE + PID

IDW INFORMATION:

DUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-20

PROJECT: Seneca Army Depot
LOCATION: Romulus, New York

DATE: 10/18/19
INSPECTORS: JM/FM
PUMP #: R19240
SAMPLE ID #: 26ESI20040

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0950	45°F	windy, light rain		~13mph		wet, bare earth

MONITORING INSTRUMENT	MONITORING DETECTOR
~~Horiba U-52~~	YSI Pro Plus 41755
HACH 2100Q 39481	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
~2 Gal

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	JM ~~14.2~~ 13.5 *	3.5 JM ~~4.2~~	10	48.6	7.34	0.655

* measured DTB = 13.85

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0ppm	0.74	0.95	~7.85	0958

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0959	0.92	150		1.35	13.3	646	6.31	64.0	12.2
1004	0.94	150		1.0	13.3	643.6	6.63	-6.8	10.9
1009	0.94	150		0.52	13.4	644	6.74	-39.4	9.30
1014	0.95	150		0.43	13.4	643	6.78	-53.2	8.05
1019	0.95	150		0.41	13.4	643	6.79	-60.3	4.83
1024	0.95	150		0.39	13.5	640.2	6.81	-65.8	4.50
1029	0.95	150		0.37	13.5	639.4	6.83	-70.5	3.49

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1				—	2 × 250 mL	PFAS	26ESI20010	1035	JM 10/18/19
2				—	2 × 250 mL	PFAS	26ESI20002	1040	JM 10/18/19
3				—	2 × 250 mL	PFAS	26ESI20010MS	1035	JM 10/18/19
4				—	2 × 250 mL	PFAS	26ESI20010MSD	1035	JM 10/18/19

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-20

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

DATE: 3/30/21
INSPECTORS: MM
PUMP #: A01769
SAMPLE ID #: 26ESI20039

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1158	57	SUNNY	35	16	180	DRY

MONITORING INSTRUMENT	MONITORING DETECTOR
HORIBA	~~Horiba~~ Horiba
PID	Rae

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = {(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT) }

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	12.9	3.5	10	NA	NA	NA
DATA COLLECTED AT WELL SITE	**PID READING (OPENING WELL)**	**DEPTH TO STATIC WATER LEVEL (TOC)**		**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
	0.1	0.5		1.0	10.9	1200
RADIATION SCREENING DATA	**PUMP PRIOR TO SAMPLING (cps)**			**PUMP AFTER SAMPLING (cps)**		
	NA				NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1205	1.0	100	.20	8.00	12.87	0.490	7.25	50	21.06
1210	1.0	100	.50	1.80	11.20	0.496	7.15	-27	16.80
1215	1.0	100	.75	1.62	11.17	6.495	7.14	-31	7.58
1220	1.0	100	1.00	1.51	11.03	0.495	7.14	-50	8.21
1225	1.0	100	1.25	1.46	10.96	0.496	7.13	-64	3.63
1230	1.0	100	1.50	1.27	10.94	0.496	7.13	-82	2.96
1235	1.0	100	1.75	1.15	10.93	0.496	7.11	-83	3.11
1240	1.0	100	2.00	1.09	10.91	0.497	7.11	-85	3.54
1245	1.0	100	2.25	1.07	10.91	0.497	7.10	-87	3.26
1250	1.0	100	2.50	1.04	10.81	0.497	7.11	-87	2.06
1255	1.0	100	2.75	0.99	10.81	0.497	7.11	-87	3.14
1300	1.0	101	3.00	0.97	10.79	0.497	7.10	-87	1.79
1315									
1310									
✓	SAMPLE			2.21	11.38	0.494	7.24	-20	4.11

MW 26-20

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
	PFOA +21 PFAS MOD 537			NONE	2/250	HDPE	26ESI20039	1305	MH 5/30/21

EDD 5-5-21

COMMENTS: (QA/QC?)

HORIBA, PID + Hach CALABRATED

Hach USED TO TEST TURBIDITY

IDW INFORMATION:

Water PUMPED ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-21

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

DATE: 6/29/20
INSPECTORS: MCH AS
PUMP #: 042467
SAMPLE ID #: FHES100014

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1530	80°F	Sunny	49%	11 mph	320	Dry

MONITORING INSTRUMENT	MONITORING DETECTOR
YSI 550A	Temp, DO
YSI 556	ORP, pH, SPC cond.

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.165	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	-	-	-	-	-	-

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	0.0	5.74	5.91	18.53	1530

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1530	6.46	400	—	3.2	9.8	0.507	7.25	-16.1	53.2
1535	6.65	400	0.75	4.4	10.4	0.496	7.09	-11.9	22.2
1540	6.44	325	1.50	4.9	11.6	0.495	7.03	-11.4	28.1
1550	6.44	200	2.0	4.7	11.8	0.492	6.96	-12.4	11.3
1600	6.44	200	2.75	4.1	11.9	0.488	6.89	-12.5	4.55
1605	6.45	200	3.50	4.1	11.9	0.487	6.87	-12.7	2.47
1610	6.45	250	4.0	4.0	11.9	0.484	6.86	-12.4	2.93

Collected @ 1615

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
				None	2/250	Plastic	26ES120014	1615	

COMMENTS: (QA/QC?)

Collected @ 1615 for 26ES120014

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-21

PROJECT: SEAD 26
LOCATION: ROMULUS, NY

DATE: 3/26/21
INSPECTORS: KM
PUMP #: 18212
SAMPLE ID #: 26ES20040

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1230	64°F	cloudy, windy	—	—	—	Dry	MiniRAE3000	Rae
							Hach	Hydra

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
2.35535

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	17.46	5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.1	3.01	3.40	15.46	1255

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	3.41	200	0	6.59	14.86	0.461	7.50	88	15.4
10	3.32	150	0.40	1.00	9.47	0.521	7.06	80	7.73
20	3.40	180	0.90	0.86	8.46	0.524	6.93	31	8.84
30	3.40	180	1.40	0.88	8.55	0.515	6.80	-9	5.45
40	3.44	180	1.90	1.01	8.66	0.512	6.69	-25	5.29
50	3.40	180	2.40	1.07	8.65	0.501	6.72	-38	5.98
55	3.40	180	2.65	1.11	8.29	0.499	6.71	-41	2.98
60	3.40	180	2.90	1.13	8.13	0.497	6.69	-40	3.45
65	3.40	180	3.15	1.23	8.04	0.493	6.66	-37	3.48
70	3.40	180	3.40	1.27	8.03	0.489	6.63	-34	3.65
Final				4.66	9.42	0.465	6.81	19	2.89

MW26-21

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
PFOAS mod 537 + 21 components	None	2/250	HDPE	26FSI20040	1415	EM/5-5-21

COMMENTS: (QA/QC?)

Pen + HDPE tubing

Equip cl. prior to use.

IDW INFORMATION:

water dumped on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-26-22

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

DATE: 6/24/20
INSPECTORS: A. Cook
PUMP #: 042467
SAMPLE ID #: FES100015

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1245	81	Sunny	54%	12mp	150	Dry

MONITORING INSTRUMENT	MONITORING DETECTOR
YSI 556	ORP, pH, Temp
YSI 550A	Temp. DO

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.165	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	-	-	-	-	-	-
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	6.01		9.23	15.41	1305
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)		

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1308	7.32	300	-	48.9	11.4	0.502	7.77	-23.2	~~300~~ 1000
1315	9.0	350	1.0	37.4	11.9	0.482	7.38	-9.0	31.5
1325	9.31	300	1.5	22.3	12	0.483	7.33	-9.6	~~>1000~~ Over
1330	9.25	350	2	17.5	12	0.484	7.29	-9.9	~~>1000~~ Over
1335	9.16	250	2.5	10.1	12	0.482	7.24	-10.5	~~>1000~~ Over
1345	9.03	150	3	7.8	11.9	0.481	7.23	-10.3	105.4
1350	8.93	150	3.5	7.9	11.8	0.479	7.20	-10.7	49.3
1355	8.90	150	3.75	11.4	11.5	0.480	7.19	-10.6	49.2
1402	8.90	150	4.25	8.6	11.1	0.480	7.16	-10.2	~~>1000~~ 1533
1407	8.91	150	4.5	12.4	10.9	0.478	7.16	-10.1	~~>1000~~ Over
1415	8.93	150	4.75	20.3	10.7	0.481	7.18	-9.5	~~>1000~~ Over
1425	9.05	150	5.2	22.9	11.4	0.480	7.22	-12.3	74.9
1433	10	150 300	6	14.8	10.6	0.481	7.21	-9.3	Over
1448	11.74	400	7	36	10.2	0.492	7.29	-12.5	79.9
1455	13.14	400	8	36.6	10.2	0.491	7.28	-6.5	80.1

Sheen on water

- Turned up flow rate, turbidity went down then back up. let well sit, move to next one pumped ~9 gallons

- Come back to well, purged. took turbidity readings: 80, 35, 49. Sampled at 49 NTU. @ 1640

SAMPLING ORDER	PRESERVATIVES	BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
		COUNT/ VOLUME	TYPE			
	None	2/250	Plst	24ES120015	1640	

COMMENTS: (QA/QC?)

Sample collected at 1640 - 24ES120015

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 26 ~~38~~ 22

PROJECT: Seneca Army Depot
LOCATION: SEAD 26

DATE: 5/30/21
INSPECTORS: mt
PUMP #: A01769
SAMPLE ID #: 26EST200 MS/MSD

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0854	43	sunny	56	9	133	moist

MONITORING INSTRUMENT	MONITORING DETECTOR
HORIBA	HACH
PID	Lamp

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	17.6	5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	3.8	5.5	15.6	0855

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0900	3.9	100	.25	11.89	8.21	0.535	7.46	183	64.2
0905	4.2	100	.35 ~~.35~~	6.24	8.06	0.535	7.31	186	51.4
0910	4.6	100	.65	3.89	7.71	0.536	7.26	190	37.6
0915	5.3	100	1.00	2.20	7.67	0.536	7.23	192	27.6
0920	5.3	100	1.25	2.06	7.68	0.534	7.20	190	21.0
0925	5.3	100	1.50	1.84	7.69	0.529	7.19	190	16.7
0930	5.3	100	1.75	1.63	7.70	0.526	7.17	189	12.8
0935	5.3	100	2.00	1.54	7.80	0.525	7.15	190	10.6
0940	5.3	100	2.25	1.49	7.87	0.524	7.14	191	9.2
0945	5.3	100	2.50	1.46	7.89	0.523	7.15	191	11.9
0950	5.4	100	2.75	1.39	8.02	0.523	7.15	191	12.6
0955	5.4	100	3.00	1.35	8.06	0.522	7.15	191	12.0
1000	5.4	100	3.25	1.32	8.11	0.519	7.14	191	11.8
1005	5.5	100	3.50	1.31	8.26	0.512	7.14	191	10.2
1010	5.5	101	3.75	1.31	8.36	0.514	7.14	191	8.11
> Sample				2.79	8.83	0.503	7.35	189	12.20

MW 26-22

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
	PFOA + 21 PARAM MOD 537			NONE	2/250	HDPE	26ES120[illegible]	1020	MA 3/30/21

EDD 5-5-21

COMMENTS: (QA/QC?)

CALIBRATED HORIBA, PID + Hach
Hach USED TO DETERMINE TURBIDITY
LEFT TUBING IN WELL
NO PLUG IN WELL

IDW INFORMATION:

WATER DUMPED ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-23S

PROJECT: SEAD
LOCATION: AREA 26
SEAD

DATE: 8/31/2020
INSPECTORS: DAN CHAMBERLAIN
PUMP #: 2286
SAMPLE ID #: 26ES220016

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM) VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
09:00	75	PARTLY CLOUDY	MED	5-10	270	DRY	18451	23873
							Horiba	Peristaltic pump

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
(17.66 - 5.95) 0.16 = 1.88 G

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	15	5	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	5.81	5.95	12.0	13:55

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (°C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
13:55	5.81	200	0.6	0.64	19.73	0.517	7.59	29	19.0
14:05	5.90	150	0.5	0.61	17.20	0.549	7.51	23	17.5
14:15	5.90	150	1.0	0.50	19.34	0.527	7.27	15	21.0
14:25	5.92	150	1.4	0.49	18.64	0.535	7.20	12	26.9
14:35	5.92	150	1.8	0.56	18.57	0.543	7.15	8	38.8
14:45	5.92	150	2.2	0.58	19.63	0.532	7.19	17	8.8
14:55	5.94	150	2.6	0.57	18.68	0.529	7.20	9	0.0
15:05	5.95	180	3.0	0.48	19.32	0.536	7.24	0	0.0
15:15	5.94	180	3.5	0.43	20.28	0.530	7.22	-5	0.0
15:25	5.95	180	3.9	0.38	20.38	0.524	7.21	-7	0.0
15:35	5.95	150	4.3	0.40	20.74	0.529	7.19	-9	0.0
15:45	5.95	180	4.8	0.37	20.46	0.526	7.19	-9	0.0
15:55	5.95	180	5.2	0.36	20.58	0.528	7.15	-5	0.0

MW26-23S

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA, Mod 537, 21 compounds			NA	2x250mL	PLASTIC	26ESI 2016	15:55	8/31/2020 EA

COMMENTS: (QA/QC?)

- HDPE; Silicon tubing used

IDW INFORMATION:

- IDW in dumpster; GW on ground.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-23S

PROJECT: SEAD 26
LOCATION: ROMULUS, NY

DATE: 3/26/21
INSPECTORS: KM
PUMP #: 18212
SAMPLE ID #: 26ESI20042

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS
1015	60°F	Rain	—	—	—	Moist

MONITORING

INSTRUMENT	DETECTOR
MiniRAE3000	PID
Hach	Hach

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(TOW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
2.31297

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	17.76	5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	3.57	3.69	15.76	1022

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	3.65	200	0	5.61	13.60	0.627	7.03	92	60.8
10	3.68	200	0.50	0.79	9.24	0.650	6.78	78	13.6
20	3.69	200	1.00	0.71	8.91	0.648	6.63	78	8.43
30	3.69	200	1.50	0.60	8.83	0.646	6.53	73	6.55
40	3.69	200	2.00	0.58	8.68	0.645	6.54	64	5.91
45	3.69	200	2.25	0.57	8.74	0.649	6.59	62	4.27
50	3.69	200	2.50	0.60	8.79	0.648	6.61	46	3.39
55	3.69	200	2.75	0.62	8.66	0.647	6.64	40	3.45
60	3.69	200	3.00	0.62	8.64	0.649	6.69	34	3.56
Final				3.55	12.45	0.583	167.06	84	3.25

MW26-23S

SAMPLING ORDER	PRESERVATIVES	BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
PFOAS Mod 537 + 21 components	None	2/250 mL	HDPE	26ESI20042	1130	EDM/5-5-21
PFOAS Mod 537 + 21 components	None	2/250 mL	HDPE	26ESI20042 MS	1130	
PFOAS Mod 537 + 21 components	None	2/250 mL	HDPE	26ESI20042 MSD	1130	
PFOAS Mod 537 + 21 components	None	2/250 mL	HDPE	26ESI20057	1145	

COMMENTS: (QA/QC?)

Peri ~~tubing~~ pump + HDPE tubing

MS, MSD, FD collected

Equip Cal prior to use.

IDW INFORMATION:

Water dumped on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY | PARSONS | WELL #: MW26-23D

PROJECT: SENECA ARMY DEPOT
LOCATION: ROMULUS, N.Y.
SEAD 26

DATE: 8/31/2020
INSPECTORS: JHG
PUMP #:
SAMPLE ID #: 26ESE20017

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS
	72	SUNNY	—	—	—	DRY

MONITORING

INSTRUMENT	DETECTOR
Peristaltic Pump	Manson Pump
Horiba	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(TOC - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	57	42	15	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	—	4.72	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND mS (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1435	4.72	100		1.20	16.96	0.447	8.07	168	381
1445	4.85	100		0.92	19.41	0.449	7.76	164	395
1450	4.7	90		0.78	19.48	0.447	7.71	161	367
1455	4.7	90		0.72	19.90	0.449	7.66	159	314
1500	4.7	100		0.78	20.52	0.449	7.64	157	285
1505	4.7	100		0.75	20.4	0.439	7.63	156	280
1510	4.75	200		0.80	17.06	0.440	7.66	157	273
1515	4.8	100		0.63	16.25	0.443	7.64	157	268
1525	4.75	100		0.66	20.72	0.458	7.57	150	184
1535	4.75	100		0.63	21.29	0.447	7.58	148	179
1545	4.75	100		0.60	21.47	0.449	7.57	147	161
1555	4.7	50		0.65	21.98	0.455	7.56	146	137
1605	4.7	100		0.60	19.30	0.434	7.57	149	98.7
1615	4.7	100		0.37	18.73	0.443	7.56	131	37.4
1625	4.7	100		0.35	18.46	0.441	7.55	121	30.5
1635	4.7	100		0.30	18.83	0.450	7.54	107	10.2
1640	4.72	100		0.37	19.51	0.454	7.53	105	13.2
1645	4.71	100		0.39	20.7	0.443	7.53	101	13.1
1650	Sampling time								

8/31
1645

MW 26 - 230

SAMPLING ORDER		PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
				COUNT/ VOLUME	TYPE			
1	PFOAs Mod 537 21 Compounds		NA	2/250ml	Plastic	26ESI200	71645	8/31/2020

COMMENTS: (QA/QC?)

- HDPE; silicon tubing used

IDW INFORMATION:

- Flow put in dumpster; GW on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW28-23D

PROJECT: Seneca Army Depot - SEAD 26
LOCATION: Romulus, NY

DATE: 3/31/21
INSPECTORS: R. Inclima
PUMP #: 24737
SAMPLE ID #: 26ESI20043

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0805	53°F	Fair	61%	10 mph	S	damp - wet	Horiba	PID
1100	51°F	Rain	76%	11 mph	S	wet	Turbidimeter	Heron

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	(2)	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1 well volume = 9.1 gal

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (~~TOC~~)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	57.80'	42' bgs	~~10~~ 15	N/A	N/A	N/A

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	1.93'	2.06'	~55'	0845

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	N/A	PUMP AFTER SAMPLING (cps)	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND ~~mS/cm (umhos)~~	pH	ORP (mV)	TURBIDITY (NTU)
15	1.96	180	0.7	0.56	14.22	0.619	6.91	-181	376
25	1.98	190	1.2	0.57	13.03	0.622	6.84	-178	261
40	2.00	225	1.8	0.55	12.09	0.635	6.78	-175	208
50	2.00	300	2.6	0.52	11.56	0.640	6.77	-172	84.0
60	2.00	190	3.1	0.41	11.47	0.643	6.74	-168	42.2
70	2.01	225	3.7	0.40	11.20	0.645	6.73	-166	19.6
80	2.02	225	4.3	0.36	11.12	0.647	6.70	-163	14.0
90	2.06	260	5.0	0.32	11.13	0.653	6.68	-159	7.0
100	2.05	300	5.8	0.35	11.08	0.654	6.67	-158	5.09
110	2.06	300	6.6	0.30	11.03	0.659	6.66	-157	4.38
120	2.07	225	7.4	0.27	11.00	0.658	6.65	-156	3.12
130	2.06	380	8.4	0.26	11.02	0.660	6.65	-155	3.32
140	2.06	225	9.0	0.26	10.94	0.660	6.65	-154	2.29
150	2.06	300	9.8	0.25	10.93	0.660	6.65	-153	2.89
Post-sample —	2.07	—	~10.5	1.10	11.08	0.657	6.68	-127	7.06

MW26-23D

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA, Mod 537, 21 compounds			–	2/250mL	HDPE	26ESI20043	1120	EOM/5-6-21
	PFOA, Mod 537, 21 compounds	FB		–	2/250mL	HDPE	SEDAPFASO1010	1120	

COMMENTS: (QA/QC?)

PID Headspace: 0.0 ppm
- Sampled using Monsoon pump + HDPE tubing.
- Slight bacterial sheen on purge water @ start time

– Equip. Cal. prior to use.

Turbidimeter Cal:
20 = 19.9 NTU
100 = 100 NTU
800 = 796 NTU
10 standard = 9.83 NTU (passed)

IDW INFORMATION:
- Waste water dumped on ground.
- PPE, tubing, solid waste in dumpster.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-26-24

PROJECT: SEAD
LOCATION: ~~AREA 26~~ SEAD

DATE: 8/31/2020
INSPECTORS: DAN CHAMBERLAND
PUMP #: 2288
SAMPLE ID #: 26FS20018

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0900	70	PARTLY CLOUDY	LOW	5-10	270	DRY	18757	23873
08:30	70	OVERCAST	LOW	0-5	180	DRY		044681

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

Peristaltic pump / Horiba

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	15	5	10	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	9.38/9.28	~~ACA~~ 17.00	12.0	08:40

	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
RADIATION SCREENING DATA	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
08:40	9.38	200	0.0	9.82	18.13	0.829	7.56	-77	0.0
08:50	11.50	200	0.5	9.99	17.04	0.821	6.88	20	0.0
09:00	12.90	150	0.9	9.34	16.89	0.829	6.76	40	0.0
09:10	13.05	150	1.3	3.68	17.13	0.842	6.99	20	0.0
09:20	14.60	100	1.6	2.48	17.32	0.857	7.14	-7	0.0
09:30	15.05	100	1.9	1.93	17.44	0.871	7.28	-43	0.0
09:40	15.47	100	2.2	1.55	17.68	0.873	7.32	-62	0.0
09:50	16.41	100	2.5	4.29	19.74	0.768	7.24	-54	86.1
10:00	16.13	80	2.7	1.20	19.97	0.825	7.28	-75	249
10:10	16.90	80	3.0	0.55	20.49	0.822	7.17	-76	70.3
10:20	16.58	80	3.2	0.55	20.72	0.818	7.17	-79	43.6
10:30	16.85	80	3.6	0.54	20.98	0.814	7.17	-85	36.2
10:35	17.00	80	3.9	0.77	21.16	0.815	7.16	-85	33.4
10:40	DRY								
08:15	9.28	100	4.0	4.12	17.89	0.953	5.79	71	26.4

MW26-24

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA, Mod			NA	2X250mL	PLASTIC	X	08:15	9/1/2020 EG
	537, 21 compounds						26 ESI 2018		

COMMENTS: (QA/QC?)

-HDPE & Silicon tubing used

IDW INFORMATION:

-IDW in dumpster & GW on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 26-24

PROJECT: Seneca Army Depot
LOCATION: Seam 26

DATE: 3/25/21
INSPECTORS: MA
PUMP #: A01769
SAMPLE ID #: 26SR200401

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1120	64	Sunny	60	10	225	Moist	HORIBA	Hach
							PID	Rae

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	17.1	5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	2.7	8.0	15.1	1120

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		NA		NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1125	3.6	150	.50	12.22	1463	0.927	7.10	162	1.57
1130	4.0	75	.60	9.24	14.51	0.931	7.08	169	2.31
1135	4.5	75	.70	5.19	1433	0.939	7.07	173	2.06
1140	5.0	75	.75	2.12	1420	0.945	7.05	175	1.75
1145	5.3	75	1.00	1.92	1420	0.948	7.06	178	192
1150	5.6	75	1.25	1.77	1423	0.950	7.08	181	1.56
1155	5.9	75	1.50	1.58	1425	0.950	7.08	184	2.37
1200	6.2	75	1.60	1.37	1433	0.948	7.09	185	2.60
1205	6.5	75	1.80	1.31	1438	0.946	7.10	186	2.90
1210	6.7	75	2.00	1.28	1443	0.944	7.10	186	2.95
1215	7.0	75	2.20	1.20	1470	0.945	7.10	188	1.99
1220	7.3	75	2.40	1.11	1475	0.945	7.10	188	1.15
1225	7.6	75	2.60	1.11	1475	0.945	7.10	188	2.77
1230									
1235									
7 SAMPLE				1.08	1845	0.887	7.13	180	3.95

MW 26-24

SAMPLING ORDER		PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
				COUNT/ VOLUME	TYPE			
	PFOA + 21 PFAS MOD 537		NONE	2/250	HDPE	26ES120844	1235	MA 3/24/21

COMMENTS: (QA/QC?)

CALIBRATED HURIBA, PID + Hach
USING Hach TO TEST TURBIDITY

IDW INFORMATION:

WATER PUMPED ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-25

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 26

DATE: 8/31/2020
INSPECTORS: JHG
PUMP #: geoPUMP R19201
SAMPLE ID #: 26 ESI 20019

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0940	63	SUNNY	—	—	—	DRY

MONITORING

INSTRUMENT	DETECTOR
16875	PKGSPECA
Per pump	Horiba

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GALS) = [(POW - STABILIZED WATER LEVEL) × WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	[illegible]	[illegible]	WELL DEVELOPMENT [illegible] COND
	15	5	10		—	—
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	[illegible] TO PUMP INTAKE (TOC)	PUMPING START TIME	
	NA	—	12.5'	—	—	
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	NA	PUMP AFTER SAMPLING (cps)	NA		

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm or umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0945	9.5	200		9.73	18.6	0.424	7.71	150	107
0950	10.5	200		9.52	17.7	0.422	7.64	164	61
0955	10.7	50		9.41	18.02	0.423	7.63	171	0.0
1000	10.75	50		9.24	18.99	0.425	7.7	172	0.0
1005	10.85	50		9.15	19.44	0.426	7.72	174	0.0
1010	10.95	50		9.09	19.67	0.427	7.74	175	0.0
1015	11.05	50		8.98	20.2	0.429	7.79	175	0.0
STOPPED				8.78	21.48	0.434	7.84	180	0.0
1055	12.2	50		↓	↓	↓	↓	↓	↓
1100	12.2	50	Wont dry pumping						
0825	9.6		SAMPLING 2 bottles						
0840	12.5	—		9.6	17.73	0.431	6.71	104	176

9/1

calibration 9/1/2020 ~~3.76~~ 4.0 pH

HORIBA
23873
18451
9/1/2020 JHG

MW26-25

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOAs Mod537			NA	2/250ml	Plastic	26ESI20019	0825	9/1/2020
	21 Compounds								

EDA

COMMENTS: (QA/QC?)

- HDPE: silicon tubing used

IDW INFORMATION:

- FDW in dumpster; gw on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-25

PROJECT: Seneca Army
LOCATION: SEAD 26

DATE: 3/25/21
INSPECTORS: MA
PUMP #: A01789
SAMPLE ID #: 26EST20045

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM) VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1303	64	Sunny	47	12	235	MOIST	HORIBA	hach
							PID	mini

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	17	5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	3.8	4.8	15	1320

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA			NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1325	4.4	150	.20	3.13	25.34	0.463	7.04	138	156
1330	4.5	100	.30	3.01	24.11	0.451	7.12	142	121
1335	4.6	100	.40	2.43	23.96	0.446	7.16	148	92.1
1340	4.7	100	.60	2.15	23.66	0.438	7.21	150	46.2
1345	4.8	100	.80	2.04	22.11	0.439	7.18	154	30.1
1350	4.9	100	1.00	1.92	22.02	0.441	7.15	158	24.4
1355	4.9	100	1.30	1.89	21.91	0.446	7.14	160	19.8
1400	5.0	101	1.50	1.89	21.83	0.447	7.13	166	16.6
1405	4.8	75	1.60	1.80	21.61	0.451	7.12	171	10.9
1410	4.8	75	1.70	1.75	21.30	0.454	7.11	175	7.66
1415	4.8	75	1.80	1.73	21.29	0.457	7.11	179	6.74
1420	4.8	75	2.00	1.70	21.25	0.457	7.11	182	7.14
1425	4.8	75	2.10	1.68	21.21	0.458	7.11	184	7.57
1430	4.8	75	2.30	1.64	21.21	0.458	7.11	185	7.72
1435	4.8	76	2.40	1.65	21.04	0.457	7.10	186	4.90
1440									
1445									
7	SAMPLE			4.49	20.95	0.284	6.41	257	10.11

MW 26-25

SAMPLING ORDER		PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA + 21 PARAM MID 537		None	2/250	HDPE	26ES220545	1445	~~MM~~ 5/12/21 EBA/5-5-21

COMMENTS: (QA/QC?)

HORIBA, PID, + Mech CALIBRATED

USING Mech FOR TURBIDITY

IDW INFORMATION:

DUMPED WATER ON GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-26

PROJECT: SEAD
LOCATION: MW26-26

DATE: 8/14/2020
INSPECTORS: DPC, JC
PUMP #: 1797
SAMPLE ID #: 26ES12008

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
11:40	85	LT BREEZE	HIGH	5	130	Dry

MONITORING

INSTRUMENT	DETECTOR
047835	047836
1797	044681

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
TO:

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	–	11.5*	10	–	–	–

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	–	16.99	19.04	21.5	11:30

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
11:30	16.99	150	0	0.90	22.84	0.688	7.17	111	87.8
11:40	17.33	150	0.3	0.17	17.61	0.696	6.82	52	0.0
11:50	17.92	150	0.6	0.17	16.64	0.736	6.77	14	0.0
12:00	18.60	150	0.9	0.00	16.74	0.738	6.74	-6	0.0
12:10	19.01	150	1.2	0.00	17.07	0.733	6.75	-24	0.0
12:20	18.98	100	1.4	0.00	18.44	0.739	6.80	-33	0.0
12:30	19.95	100	1.7	0.00	19.63	0.732	6.77	-35	0.00
12:40	19.05	100	2.1	0.00	19.66	0.719	6.79	-39	0.00
12:50	18.99	100	2.4	0.00	20.28	0.723	6.84	-43	0.00
13:00	19.04	120	2.7	0.00	19.37	0.727	6.83	-44	0.00

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFAS, modified 537, 21 compounds			NA	2/250 mL	HDPE	26 OCT 2020	1300	EDA/ 8-14-20

COMMENTS: (QA/QC?)

(1) ~~Purged dry and re-sampled to full static vol.~~ EDA

IDW INFORMATION:

(1) Pumped on ground surface area.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-26

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 9/25/2021
INSPECTORS: MPC
PUMP #: —
SAMPLE ID #: 25ES21MW26

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS
08:40	50	CLEAR	MED	5	90	WET

MONITORING INSTRUMENT	MONITORING DETECTOR
HORIBA U-52	pen
SKINNY DIPPER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
2.10

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	13.18	4	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	-0.20	0.00	12.0	0940

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (mL/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
09:40	-0.20	200	0.6	4.11	12.58	0.827	7.24	62	18.6
08:50	-0.20	300	0.5	0.98	11.50	0.845	7.01	-76	23.9
08:55	0.0	300	0.8	0.78	11.31	0.847	6.86	-88	6.89
09:00	0.13	200	1.1	0.58	11.05	0.849	6.91	-101	2.37
09:05	0.06	200	1.3	0.55	11.43	0.845	6.91	-102	2.05
09:10	-0.04	200	1.6	0.51	11.86	0.839	6.91	-103	1.78
09:15	-0.09	200	1.8	0.51	12.00	0.839	6.91	-105	1.55
09:20	-0.11	300	2.1	0.56	12.12	0.838	6.91	-107	1.38
09:25	-0.08	350	2.5	0.55	11.95	0.846	6.91	-108	3.27
09:30	-0.03	350	2.8	0.53	11.71	0.855	6.90	-109	5.17
09:35	-0.01	350	3.1	0.52	11.72	0.853	6.90	-110	3.89
09:40	0.00	350	3.5	0.50	11.76	0.852	6.89	-111	1.24
09:45	0.00	350	3.8	0.48	11.80	0.852	6.89	-112	0.99
09:50	0.00	350	4.2	0.46	11.84	0.853	6.89	-113	0.81
10:05	0.00	350	5.2	0.84	12.14	0.838	6.94	-71	2.05

mw25-26

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT	BOTTLES VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA 21 PARAMETER MW537			NA	2X250mL		HDPE	25ESI20043	09:50	EOM/5-5-21

COMMENTS: (QA/QC?)

Equip cal prior to sampling.

IDW INFORMATION: PURGE WATER DUMPED ON THE GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-26

PROJECT: Seneca Army Depot - SEAD 26
LOCATION: Romulus, NY

DATE: 3/25/21
INSPECTORS: R. Inclima
PUMP #: 2288
SAMPLE ID #: 26ESI20046

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1200	67°F	Sunny	55%	11 mph	SSW	dry/damp

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	PID
Turbidimeter	Hach

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
[well volume = 1.65 gal

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	23.75'	11.5	10	N/A	N/A	N/A

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	13.60'	15.04'	~22.75'	1210

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	N/A	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
5	14.39	100	0.13	0.82	14.84	1.07	6.39	118	2.76
15	14.36	100	6.39	0.83	15.05	1.09	6.27	121	1.89
20	14.50	100	0.5	0.68	14.33	1.09	6.25	122	1.80
25	14.65	120	0.66	0.62	14.17	1.09	6.24	122	1.51
30	14.81	120	0.82	0.61	14.47	1.08	6.22	122	1.20
35	14.89	120	0.98	0.55	14.49	1.08	6.21	122	1.11
40	14.96	120	1.14	0.53	14.85	1.08	6.21	121	1.08
45	15.04	120	1.3	0.52	14.98	1.08	6.20	118	1.21
Post-sample	15.18	120	1.9	1.38	16.66	1.08	6.36	125	1.56

MW26-26

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT	BOTTLES VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA, Mod 537, + 21 compounds			–	2	250mL	HDPE	26ESI20046	1300	EOM/5-5-21

COMMENTS: (QA/QC?)
PID Headspace: 0.0 ppm
- Sampling using peri pump + HDPE tubing

- Equip. Cal. prior to use.

Turbidimeter Cal: 20 = 19.8 NTU
100 = 100 NTU
800 = 799 NTU
10 NTU standard = 9.98 NTU (passed)

IDW INFORMATION:
- Waste water dumped on ground.
- PPE, tubing, other solid waste in dumpster.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-27

PROJECT: SEAD
LOCATION: AREA 26
SEAD

DATE: 8/17/2026
INSPECTORS: DAN CHAMBERLAND
PUMP #: 1797
SAMPLE ID #: 26ES1200 21
09:20

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
13:30	80	PARTLY CLOUDY	LOW	10	90	DRY	19358	21172
							04491681	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
TD: 20.0

Herbie, Peri pump

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	16.5	6.5	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	15.50	19.44	19.94	13:30

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
13:30	15.50	150	00	4.76	20.66	0.870	6.58	110	OR
13:40	18.19	90	0.4	2.64	19.05	0.861	6.52	124	245
13:50	19.00	90	0.6	2.47	18.67	0.866	6.56	124	234
14:00	20.00	80	0.7	3.17	17.54	0926	6.58	124	149
PURGED			DRY						
0900	18.55	LEVEL CHECK							
09:00	19.44	NOT ENOUGH WATER FOR PARAMETERS							

JTG 8/20/20 8/21/20

MW26-27

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA, mod 537, 21 comp			NA	2x 250mL	PLASTIC	26ESI 20021	09:20	8/21/2020

COMMENTS: (QA/QC?)

COLLECT SAMPLE 26ESI 20021 @ 09:20

- well purged dry. Did not recharge to DTS static DTW. slow yield well. collected sample for analysis

- HDPE & silicon tubing used

IDW INFORMATION:

- IDW put in a 55 gall. trash in dumpster for ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW25-27

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 25

DATE: 3/25/2021
INSPECTORS: DC
PUMP #: —
SAMPLE ID #: 25ES21004

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0-360)	GROUND / SITE SURFACE CONDITIONS
10:35	55	LIGHT CLOUDS	MOD	10	180	WET

MONITORING

INSTRUMENT	DETECTOR
HORIBA U52	pH
SKC AIR SAMPLER	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(TOW - (STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.9

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	14.21	5	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	1.97	3.40	13	10:35

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	—			—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10:35	1.97	200	0.0	1.06	17.77	14.3	6.21	35	125
10:45	3.20	200	0.5	0.33	13.52	15.7	5.95	14	19.0
10:57	3.32	150	0.9	0.30	13.80	15.8	5.93	13	14.1
11:00	3.33	150	1.1	0.30	13.59	15.8	5.92	14	11.8
11:05	3.35	150	1.3	0.30	13.47	15.9	5.91	15	10.1
11:10	3.36	150	1.5	0.30	13.30	16.1	5.91	18	25.5
11:15	3.35	150	1.7	0.28	13.50	16.2	5.90	21	9.88
11:20	3.37	150	1.9	0.28	13.52	16.2	5.90	23	9.27
11:25	3.39	150	2.1	0.29	13.47	16.2	5.90	26	8.83
11:30	3.40	150	2.3	0.29	13.45	16.2	5.89	28	8.09
11:35	3.40	150	2.5	0.28	13.78	16.2	5.89	30	8.69
11:45	3.41	150	2.9	0.61	13.92	16.6	6.06	27	9.45

MW25-27

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA 21 PARAMETER MOD 537		.	NA	2X250mL	HDPE	25ES120044	11:45	EOM/5-5-21

COMMENTS: (QA/QC?)

Equip Cal. prior to use

IDW INFORMATION:

PURGE WATER DUMPED ON THE GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-27

PROJECT: SEAD 26
LOCATION: ROMULUS, NY

DATE: 3/25/21
INSPECTORS: KM
PUMP #: 18212
SAMPLE ID #: 26ESI20047

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1350	72°F	Sunny	—	—	—	Dry	MiniRAE 3000	PID
							Hach	Hach

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.52894

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	20.40	6.5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	11.02	14.90	18.40	1426

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	11.30	150	0	5.54	25.00	0.917	7.21	123	29.9
10	11.95	180	0.25	2.68	22.38	0.859	6.99	13	9.53
20	12.49	160	0.5	2.59	21.16	0.878	6.89	15	8.27
30	13.00	160	0.75	2.52	20.83	0.893	6.83	26	5.65
35	13.17	150	1.00	2.45	20.79	0.894	6.83	28	4.36
40	13.41	150	1.2	2.48	20.83	0.900	6.81	33	3.81
45	13.60	150	1.4	2.31	21.00	0.898	6.82	29	3.74
50	13.83	150	1.6	2.22	21.16	0.896	6.82	27	4.22
55	14.31	150	1.8	2.07	21.27	0.891	6.81	30	5.85
60	14.71	150	2.0	1.98	21.30	0.890	6.81	32	7.16
65	15.2	150	2.2	1.95	21.34	0.887	6.79	34	10.0
70	15.78	150	2.4	1.94	21.36	0.891	6.80	37	12.5
75	16.31	150	2.6	1.95	21.35	0.893	6.78	40	20.0
80									

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-27

PROJECT: SEAD 26
LOCATION: Romulus, NY

DATE: 3/26/21
INSPECTORS: KM
PUMP #: 18212
SAMPLE ID #: 26EST20047

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS
0900	55°F	cloudy/rain				DM

MONITORING

INSTRUMENT	DETECTOR
MiniRAE 3000	PID
Hach	Turbia

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.165	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	20.40	6.5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	12.96	14.90	18.40	0912

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	13.48	120	0	4.60	17.72	1.04	5.36	137	19.5
5	13.84	120	0.2	2.69	16.75	0.998	6.41	117	13.2
10	14.33	120	0.4	2.81	16.45	0.968	6.50	119	15.5
15	14.90	120	0.6	3.94	16.30	0.899	6.49	125	28.5
Final				6.76		0.837	6.12	149	59.7

Other sample

MW 26-21

SAMPLING ORDER	PRESERVATIVES	BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
		COUNT/ VOLUME	TYPE			
PFAAs mod 537 + 21 components	None	2/250 mL	HDPE	26EST20047	0930	EOM/ 5-5-21

COMMENTS: (QA/QC?)

Sampled due to water level drop increasing turbidity again

Peri pump + HDPE tubing

- Equip cal prior to use.

IDW INFORMATION:

water dumped on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-28S

WL=15.9

PROJECT: SENECA ARMY
LOCATION: SENECA, NEW YORK
SEAD 26

DATE: 8/17/2020
INSPECTORS: JHG
PUMP #: —
SAMPLE ID #: —
26ES2 20022

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
12:47	80	PARTCLOUDY	HIGH	—	—	Dry	15265	25335

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

Peristaltic pump, Hydrasleeve

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	17	7	10	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	15.9	16	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mmhos)	pH	ORP (mV)	TURBIDITY (NTU)
13:10	15.9	200ml	—	0.26	17.37	0.655	6.71	-154	16.7
13:20	16	200ml		0.22	16.93	0.659	6.61	-159	19.6
13:25	16	200ml		6.20	16.48	0.663	6.58	-160	0.0
13:30	16	200ml		0.23	15.67	.664	6.59	-161	1000
13:40	16	200ml		0.19	15.24	0.667	6.57	-157	109
14:00	16	200ml		0.23	23.2	0.577	6.90	-130	215
14:10	16	200ml		0.21	22.64	0.588	6.74	-140	205
14:20	16	200ml		0.24	19.85	0.619	6.68	-147	26.1
14:25	16	200ml		0.23	19.79	0.617	6.66	-147	15.1
14:32	16	200ml		0.23	18.37	0.636	6.66	-149	54.0
14:41	16	200ml		0.25	18.62	0.632	6.65	-150	16.4
14:50	16	200ml		0.25	18.66	0.630	6.65	-151	5.7
14:55	16	200ml		0.19	18.95	0.627	6.65	-151	1.5
SAMPLE									
	0.1			10%	3%	3%	0.1	±10	10%
				0.5					

MW26-285

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFAS, mod 537			NA	2 / 250 mL	plastic	26BSE20022 26BSD20022MS	1455 1455	EQA - 8-18-20
	21 compounds						26BSE20022-DUP 26BSD20022	1455 1201	✓

COMMENTS: (QA/QC?)

- used ~~peristaltic~~ peri pump ; HDPE tubing ; silica

IDW INFORMATION:

- purged water disposed on ground ; FD w/ in dumpster

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-285

PROJECT: PFOA Investigation
LOCATION: Seneca Army Depot

DATE: ~~10/26/285~~ 3-25-21
INSPECTORS: LT
PUMP #:
SAMPLE ID #: 26ESI20048

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1030	63°F	Sunny	66%	12 mph	0	Clear

MONITORING	
INSTRUMENT	DETECTOR
Horiba U-52	Heron Skinnychipper
Turbidimeter	pump

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	~~27~~	~~7~~	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
Total Depth = 198	0.0	14.65	14.75	18.8	1045

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME ~~military~~	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1050	14.74	100	0	0.00	14.34	0.712	6.32	94	74.5
1100	14.73	125	0.75	0.00	14.52	0.703	6.36	75	25.3
1110	14.75	125	1.0	0.00	14.49	0.682	6.35	64	17.7
1120	14.74	125	1.5	0.00	14.53	0.679	6.35	54	15.7
1125	14.74	125	1.75	0.00	14.40	0.671	6.36	46	13.2
~~1800~~	~~1802~~								
1130	14.74	125	2.0	0.00	13.82	0.670	6.38	41	7.60
1135	14.75	125	2.25	0.00	13.69	0.671	6.38	34	6.74
1140	14.74	125	2.5	0.00	14.05	0.677	6.39	29	6.08
1145	14.74	125	2.75	0.00	14.00	0.672	6.39	27	6.29
1150	- collect samples								~~6.074~~
1211	14.75	125	3.0	0.00	14.73	0.670	6.40	31	6.74

MW26-28S

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOAs mod 537 21 compounds			none	2/250mL	HDPE	26ESI20048	1150	EWA 5-5-21
2	↓			↓	↓	↓	26ESI20056	1200	
3							26ESI20048MS	1150	
4	↓			↓		↓	26ESI20048MSD	1150	↓

COMMENTS: (QA/QC?)

- peripump/HDPE Tubing
- samples MS/MSD/Dup

IDW INFORMATION:

1) purged water to ground
2) IDW in dumpster

Calibration:

Turbidimeter
ID: 038241
20 NTU/20
100 NTU/100
800 NTU/800
0 NTU/9.70 NTU

Horiba
ID: 24291
PH: 3.99
Cond: 4.64 mS/cm
Turb: 0.0
DO: 9.62 mg/L

upper screen

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-280-UP

PROJECT: SEAD
LOCATION: AREA 26
SEAD

DATE: 8/17/2026
INSPECTORS: DAN CHADBOURNE
PUMP #: 24875
SAMPLE ID #: 26EIE20023

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
—	—	—	—	—	—	—	—	21172

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.473	5.564

[ONE WELL VOLUME (GAL) = (TOW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

Masoneilan

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	100	50	50	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	15.66	43.64		

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
15:26	15.86	200	0.0	0.82	23.06	0.578	8.39	48	OR
15:30	16.45	150	0.4	0.31	20.69	0.589	8.24	46	OR
15:40	19.35	150	1.0	0.21	19.95	0564	7.94	46	OR
15:50	20.15	150	1.4	0.23	20.11	0569	8.00	35	OR
15:55	20.85	150	1.6	0.18	20.11	0.575	8.07	29	OR
16:00	21.22	200	1.9	0.19	19.81	0.596	8.11	26	OR
16:05	22.46	200	2.2	0.18	19.92	0.587	8.09	24	OR
16:10	22.95	200	2.5	0.16	19.08	0.572	8.06	23	OR
16:20	24.00	200	2.9	0.16	19.91	0.576	8.09	18	OR
16:30	25.22	200	3.6	0.30	19.37	0.579	8.17	12	OR
16:40	26.40	~~200~~ 150	4.6	0.24	19.07	0.579	8.21	6	OR
16:50	32.55	400	6.0	0.24	17.99	0.569	8.12	-21	OR
17:00	38.46	400	8.0	1.05	17.11	0.582	8.16	-40	OR
17:10	43.14	400	10.5	0.22	17.23	0.588	8.23	-57	OR
17:19	43.08	150	11.0	0.27	16.09	0.611	8.30	-67	~~OR~~ 969
17:20	43.45	140	11.2	0.27	16.42	0.598	8.36	-89	975
17:25	43.59	140	11.4	0.26	17.41	0.592	8.38	-105	960
17:30	43.64	140	11.6	0.27	17.26	0.596	8.42	-120	956

upper screen

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-28DUP

PROJECT: SEAD
LOCATION: AREA 26
SEAD

DATE: 8/18/2020
INSPECTORS: DANGUANGERANO
PUMP #: 24875
SAMPLE ID #: 26ESE20023

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
10:50	80	CLEAR	low	5-10	180	DRY	18358	21172
							044681	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
See Page 1

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	100	50	20	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	15.88	48.21	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10:30	15.88	400	0	0.94	12.72	0.643	7.95	-237	OR
10:40	25.61	400	4	0.33	12.09	0.638	7.98	-273	742
10:50	32.28	400	6	0.30	12.33	0.637	7.95	-278	997
11:00	34.47	400	8	0.31	12.73	0.636	7.98	-284	634
11:10	36.18	300	10	0.79	12.33	0.636	8.02	-290	552
11:20	43.00	300	11	0.29	12.47	0.638	8.05	-284	992
11:30	44.90	300	12	0.28	12.86	0.638	8.09	-288	OR
11:40	46.55	300	13	1.23	13.07	0.638	8.19	-291	OR
11:50	47.29	200	13.5	0.27	13.41	0.637	8.24	-292	OR
12:00	48.00	200	14	0.29	13.60	0.636	8.33	-296	OR
12:10	48.10	200	14.5	0.24	13.80	0.637	8.38	-300	OR
12:20	48.20	200	15.0	0.29	13.96	0.639	8.40	-303	OR
12:30	48.18	250	16.5	0.23	14.09	0.638	8.42	-306	OR
12:40	48.15	250	16.0	0.23	14.18	0.636	8.44	-308	OR
12:50	48.21	250	16.6	0.23	14.25	0.635	8.45	-310	OR

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA + 21 compounds mod 537.0			NONE	2-250mL	PLASTIC	26@I20023	12:50	EOH 8-18-23

COMMENTS: (QA/QC?)

HAD TO ADJUST FLOW RATE TO STABILIZE WATER LEVEL

- used ss monsoon pump: HDPE Tubing :silicon
- collect sample from upper part of screen (50-75 bpm)

IDW INFORMATION:

- purged water poured on ground : IDW in dumpster

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 26-280-UP

PROJECT: SENECA army DEPOT
LOCATION: SEAD 26

DATE: 3/30/2021
INSPECTORS: DPC
PUMP #: 27779
SAMPLE ID #: 26ES220049

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
14:50	60	CLEAR	MED	5	270	WET	HORIBA U-52	HACH 2100Q
							SKINNY DIPPER	manscon

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	100	50	50	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	13.10	29.80	62	14:25

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
14:25	13.10	200	0.0	2.81	19.29	0.772	7.79	50	190
14:50	16.05	200	2.4	0.86	21.35	0.833	7.83	-69	776
15:10	18.20	200	4.3	0.68	20.02	0.843	7.85	-65	OR
15:15	19.52	200	4.5	0.63	19.18	0.825	7.83	-78	OR
15:20	20.75	200	4.7	0.59	15.79	0.809	7.82	-90	OR
15:25	21.76	200	4.9	0.39	16.85	0.811	7.79	-104	OR
15:30	22.00	200	5.2	0.28	19.29	0.813	7.75	-118	861
15:35	22.10	180	5.3	0.28	20.14	0.812	7.77	-123	807
15:40	22.20	160	5.5	0.28	20.76	0.810	7.78	-127	715
15:45	22.84	160	5.7	0.30	19.70	0.815	7.81	-133	681
15:50	23.25	160	5.9	0.27	18.64	0.820	7.84	-139	615
15:55	23.89	160	6.1	0.30	18.64	0.816	7.84	-145	615
16:00	24.28	160	6.3	0.27	18.63	0.811	7.83	-151	614
16:05	25.01	160	6.5	0.27	18.19	0.819	7.83	-155	585
16:10	26.23	160	6.7	0.26	17.76	0.815	7.82	-160	502
16:15	27.95	160	6.9	0.26	16.44	0.817	7.81	-165	419
16:20	28.16	160	7.1	0.26	16.81	0.817	7.80	-167	427
16:25	28.89	160	7.3	0.27	17.09	0.816	7.80	-169	454
16:30	29.51	160	7.5	0.27	7.18	0.816	7.79	-173	418
16:35	30.20	160	7.7	0.28	17.27	0.815	7.79	-176	472

PG 1 OF 4

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26 2R DUP

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 26

DATE: 3/31/2021
INSPECTORS: DPC
PUMP #: 247739
SAMPLE ID #: 26ESI20049

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
08:30	50	OVERCAST	HIGH	10	180	WET/MUD

MONITORING

INSTRUMENT	DETECTOR
HORIBA U-52	HACH 2100 Q
SE TANNY DIPPER	MANSON

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	100	50	~~40~~ 50	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	13.10	29.80	62	14:25

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
08:30	13.10	200	7.9	4.55	12.32	0.762	7.77	173	657
08:35	17.10	200	8.1	2.75	12.78	0.740	8.21	-1	294
08:40	18.06	200	8.3	2.19	12.70	0.737	8.28	-41	277
08:45	18.71	200	8.6	1.11	12.61	0.739	8.33	-60	214
08:50	19.11	200	8.8	1.19	12.70	0.735	8.35	-74	211
08:55	19.55	200	9.0	2.37	12.79	0.731	8.38	-84	205
09:00	20.05	200	9.2	2.01	12.63	0.725	8.40	-96	213
09:05	20.96	200	9.4	1.88	12.54	0.720	8.42	-102	210
09:10	21.76	200	9.7	1.40	12.43	0.716	8.43	-110	215
09:15	21.72	200	9.9	1.36	12.07	0.722	8.45	-119	227
09:20	22.03	200	10.2	1.31	11.92	0.730	8.46	-128	243
09:25	22.19	200	10.4	1.24	11.63	0.731	8.45	-132	279
09:30	22.34	200	10.6	1.27	11.20	0.732	8.44	-137	318
09:35	23.91	200	10.8	1.03	11.29	0.734	8.45	-142	294
09:40	24.28	200	11.0	0.84	11.41	0.735	8.46	-148	271
09:45	24.65	200	11.3	0.91	11.53	0.737	8.47	-156	241
09:50	25.16	200	11.5	0.92	11.39	0.737	8.49	-160	207
09:55	25.93	200	11.7	0.93	11.26	0.736	8.51	-164	198
10:00	26.39	200	11.9	0.93	11.25	0.736	8.51	-169	209
10:05	27.10	200	12.2	0.94	11.24	0.735	8.51	-173	226
10:10	27.80	200	12.4	0.96	11.22	0.735	8.52	-178	257

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: mw6-280 (D

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 26

DATE: 7/31/2021
INSPECTORS: MPC
PUMP #: 29739
SAMPLE ID #: 26FSZ20049

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
10:10	95	OVERCAST	HIGH	5	270	WET

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	Hach
water level	mansam

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	100	50	50	—	—	

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	19.6	29.80	62	19:25

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10:15	29.21	200	12.6	0.52	11.45	0.735	8.54	-182	249
10:20	29.28	200	12.8	0.46	11.20	0.737	8.52	-185	240
10:25	29.35	200	13.1	0.37	11.37	0.739	8.51	-187	236
10:30	29.57	200	13.3	0.39	11.37	0.739	8.58	-196	246
10:35	29.60	200	13.5	0.40	11.36	0.738	8.64	-211	254
10:40	29.62	200	13.7	0.43	11.39	0.738	8.65	-212	257
10:45	29.64	200	13.9	0.45	11.43	0.737	8.66	-213	247
10:50	29.92	200	14.2	0.41	11.49	0.737	8.66	-217	240
10:55	29.07	200	14.4	0.37	11.44	0.737	8.66	-220	234
11:00	29.30	200	14.6	0.36	11.45	0.738	8.66	-222	229
11:05	29.41	200	14.9	0.35	11.56	0.738	8.68	-228	217
11:10	29.53	200	15.1	0.34	11.66	0.738	8.70	-234	212
11:15	29.67	200	15.3	0.33	11.59	0.739	8.70	-235	210
11:20	29.80	200	15.5	0.31	11.51	0.740	8.69	-236	209

PG 4 OF 4

MW 26-280-UP

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA & PARAMETER MOD 537			MA	2X250mL	HDPE	26ESE20049	11:20	EDM 5-6-21

COMMENTS: (QA/QC?)

THE LAST TIME THIS WELL WAS SAMPLED TURBIDITY REMAINED HIGH EVEN AFTER SIGNIFICANT PURGING

ALL METERS CALIBRATED BEFORE PURGING

IDW INFORMATION:

PURGE WATER DUMPED ON THE GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-280-DN

PROJECT: SEAD
LOCATION: AREA 26
SEAD

DATE: 8/18/2020
INSPECTORS: DAN CHAMBERLAND
PUMP #: 24875
SAMPLE ID #: 26ESP20024

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
15:00	75	CLEAR	LOW	5	0	DRY

MONITORING

INSTRUMENT	DETECTOR
18759	21172
044681	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.158	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
Manson, Hersa

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	100	80	20	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	49.25	53.0	88.0	13:50

	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
RADIATION SCREENING DATA	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
13:50	49.25	800	2	0.27	11.99	0.662	8.34	-255	OR
14:00	48.60	700	4	0.20	13.25	0.652	8.37	-275	OR
14:10	49.94	300	6	0.19	13.57	0.647	8.31	-282	OR
14:30	52.02	300	7	0.18	13.07	0.649	8.25	-280	OR
14:40	52.09	200	7.5	0.17	14.13	0.649	8.25	-286	OR
14:50	52.30	180	7.9	0.19	13.94	0.643	8.21	-282	OR
15:00	52.25	180	8.3	0.19	13.60	0.643	8.17	-279	OR
15:10	52.56	180	8.7	0.19	13.54	0.645	8.14	-278	OR
15:20	52.38	210	9.1	0.18	13.68	0.641	8.12	-278	OR
15:30	52.45	220	9.6	0.19	13.22	0.647	8.14	-277	OR
15:40	52.81	200	10.0	0.17	13.53	0.643	8.17	-281	OR
15:50	52.90	200	10.4	0.17	13.47	0.644	8.17	-279	OR
16:00	52.36	180	10.9	0.18	13.81	0.641	8.21	-284	OR
16:10	52.50	180	11.4	0.16	13.91	0.645	8.27	-284	OR
16:15	52.40	180	11.6	0.15	13.82	0.645	8.31	-287	OR
16:20	52.90	200	12.0	0.16	13.76	0.647	8.32	-286	OR
16:25	52.90	200	12.2	0.16	13.78	0.643	8.32	-286	OR
16:30	53.0	200	12.4	0.17	13.79	0.643	8.31	-287	OR

MW 26-280 ON

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA - and 537			N/A	2x250mL	PLASTIC	+	16:30	8/18/2020 EDM
	21 compounds.						26ESI 20029		

COMMENTS: (QA/QC?)

FB + EB COLLECTED HERE

26ESI20024 SAMPLE ID

- Used ss monsoon ; HDPE tubing silicon
- Collected sample from lower part of screen (75'-100'bgs)

IDW INFORMATION:

- purged water dumped on ground ; FD W in dumpster

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 26-280-DN

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 26

DATE: 3/31/2021
INSPECTORS: DPC
PUMP #: 29737
SAMPLE ID #: 26652200501

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
11:40	50	RAIN	HIGH	5	270	WET

MONITORING

INSTRUMENT	DETECTOR
HORIBA U-52	HACH 21000
SKINNY DIPPER	MANSON

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	100	50	50	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	43.10	43.81	87	11:40

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
11:40	31.50	200	0.0	0.65	12.25	0.754	8.88	-202	773
11:50	32.95	200	0.5	0.37	12.06	0.754	8.92	-241	703
12:00	33.60	200	1.3	0.30	11.95	0.753	8.96	-260	OR
12:05	34.37	200	1.8	0.32	12.08	0.753	8.94	-266	OR
12:30	35.11	200	2.2	0.34	12.20	0.752	8.92	-271	OR
12:35	35.29	200	2.4	0.31	12.20	0.752	8.92	-274	OR
12:40	35.16	200	2.6	0.29	12.26	0.751	8.94	-276	OR
12:45	35.09	200	2.8	0.30	12.14	0.751	8.95	-275	OR
12:50	35.00	200	3.1	0.31	12.07	0.751	8.95	-280	OR
12:55	35.38	200	3.3	0.31	12.28	0.751	8.96	-283	OR
13:00	35.72	200	3.5	0.31	12.42	0.752	8.97	-286	OR
13:05	36.01	200	3.7	0.33	12.47	0.752	8.97	-288	OR
13:10	36.26	200	4.0	0.36	12.51	0.752	8.97	-290	OR
13:15	36.88	200	4.2	0.31	12.60	0.752	8.97	-290	OR
13:20	37.15	200	4.4	0.27	12.64	0.751	8.96	-290	OR
13:25	37.32	200	4.6	0.28	12.70	0.744	8.95	-290	OR
13:30	37.49	200	4.8	0.29	12.70	0.747	8.94	-291	OR
13:35	37.98	200	5.1	0.28	12.67	0.745	8.90	-290	OR
13:40	38.12	200	5.3	0.27	12.65	0.744	8.86	-290	962
13:45	38.17	200	5.5	0.29	12.77	0.742	8.82	-287	887
13:50	38.65	200	5.7	0.30	12.80	0.740	8.78	-285	803

PG 2 OF 3

MW26-28D-ON

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: ~~MW26-28DM~~

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 26

DATE: 3/31/2021
INSPECTORS: DPC
PUMP #: 47339
SAMPLE ID #: 26MW28D50

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
14:00	50	OVERCAST	HIGH	10	270	WET

MONITORING

INSTRUMENT	DETECTOR
HORIBA U-52	HACH 2100Q
SKIMMY DIPPER	manson

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = {(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT) }

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	100	52	52	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	13.10	43.81	87	11:46

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
13:55	41.09	200	6.0	0.31	12.88	0.738	8.74	-282	691
14:00	41.20	200	6.2	0.32	12.93	0.736	8.70	-279	587
14:05	41.27	200	6.4	0.30	12.80	0.738	8.73	-282	585
14:10	41.18	200	6.6	0.28	12.68	0.739	8.76	-286	586
14:15	41.11	200	6.8	0.27	12.70	0.739	8.78	-287	615
14:20	41.15	200	7.1	0.26	12.72	0.740	8.80	-287	697
14:25	41.15	200	7.3	0.26	12.74	0.740	8.82	-289	736
14:30	41.10	200	7.5	0.27	12.31	0.741	8.82	-290	891
14:35	41.03	200	7.8	0.27	12.72	0.742	8.83	-290	929
14:40	41.32	200	8.1	0.29	12.75	0.741	8.80	-289	883
14:45	41.89	200	8.3	0.30	12.80	0.739	8.78	-288	807
14:50	42.07	200	8.5	0.32	12.83	0.738	8.76	-287	738
14:55	42.49	200	8.7	0.29	12.83	0.738	8.76	-288	849
15:00	42.75	200	8.9	0.26	12.83	0.737	8.77	-289	972
15:05	42.02	200	9.1	0.27	12.80	0.738	8.78	-289	902
15:10	42.19	200	9.4	0.28	12.74	0.739	8.78	-290	827
15:15	42.71	200	9.6	0.28	12.65	0.740	8.77	-290	810
15:20	42.81	200	9.8	0.29	12.56	0.741	8.76	-289	843

MW 26-280-DN

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOA VI PARAMETER MOD 537			NA	2X250mL	HDPE	26ES220052	1115:28	EDM/5-6-21

COMMENTS: (QA/QC?)

- Equip cal prior to use.
- Last time well sampled turbidity remained high after significant purging.

IDW INFORMATION: PURGE WATER DUMPED ON THE GROUND

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-29

* TD: 19.98'

PROJECT: SCAD

LOCATION: MW-26-29

DATE: 8/14/2020

INSPECTORS: JH6/DPM

PUMP #: 1797

SAMPLE ID #: 26BSI20025

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1140	85	Lt. Breeze	High	5	130	Dry	043836	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	-	17	10	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	-	17.15	17.13	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
10:30	17.15	200	0	0.49	14.29	0.746	6.7	114	11.9
10:40	19.15	150	0.7	0.41	15.11	0.769	6.56	102	0.0
10:50	19.7	100	1.0	0.0	17.47	0.761	6.69	89	0.0
11:00	—	— PURGED DRY							
13:20	15.6								
13:36	16.12	90	0.1	3.17	25.11	0.644	6.49	121	686
13:46	16.65	80	0.2	3.12	23.77	0.630	6.26	133	260
13:56	17.13	90	0.3	2.37	23.58	0.600	6.26	137	126

* TD = TOTAL DEPTH

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFAS, Mod 537, 21 comp			NA	2/250mL	HDPE	26ESE20025	1400	EDM/8/14/25

COMMENTS: (QA/QC?)

(1) Purged well dry and ~~recharged to get~~ recharged to get static DTW.

IDW INFORMATION:

(1) Purged GW dumped on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-29

PROJECT: PFOA Investigation
LOCATION: Seneca Army Depot

DATE: 3/25/21
INSPECTORS: LT
PUMP #: A0116960
SAMPLE ID #: 26ESI20051

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1330	70°	Sunny	45%	12 mph	45°	Clear

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba U52	PID minirae 3000
Turbidimeter	Heron Skinny dipper

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	17	7	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
Total Depth = 19.75	0.0 ppm	13.07	13.41	18.75	1335

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1340 (1345)	13.34	150	0	2.44	16.87	0.809	6.45	93	10.2
1350 (1355)	13.40	150	0.5	0.48	14.40	0.854	6.33	99	13.1
1400	13.41	150	1.0	0.03	14.38	0.846	6.31	98	12.8
1405	13.41	150	1.25	0.00	14.51	0.838	6.31	98	8.95
1410	13.42	150	1.5	0.00	14.27	0.844	6.31	98	9.14
1415	13.41	150	1.75	0.00	14.17	0.843	6.31	97	6.85
1420	13.42	150	2.0	0.00	14.31	0.845	6.32	97	5.95
1425	- collect sample								
1433	13.41	150	2.5	0.00	14.32	0.825	6.32	97	7.06

MW26-29

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOAs - mod 537 21 Compounds			none	2/250mL	HDPE	26ESI20051	1425	EOM 5-5-21

COMMENTS: (QA/QC?)

- Peri pump / HDPE tubing
- Equip Cal. prior to use.

IDW INFORMATION:

Purge water dumped to ground surface

IDW thrown in dumpster

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-30

PROJECT: SEAD
LOCATION: SEAD 26

DATE: 8/17/2020
INSPECTORS: JGoldthwait
PUMP #: —
SAMPLE ID #: 26ES220026

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
11:15	80	PART SUNNY	MID	LIGHT	—	—	255335	
							15265	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

Peristaltic Pump, Horiba

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	[illegible] DEVELOPMENT [illegible]TY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	16	6	10	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	[illegible] TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	17.3	17.65	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA		NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

[illegible] (24 hr)	[illegible] WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1203	17.3	160ml		8.91	24.11	0.0	7.14	55	322
1209	18.05	160ml		8.91	24.11	0.0	7.14	55	322
1212	19.55	160ml		6.89	17.97	0.972	6.76	0.5	1.7
1216	19.20	160ml		6.74	17.65	0.965	6.74	0.0	326
8/18/20	NEXT DAY SAMPLING								
10:20	15.75	200		6.60	17.41	1.01 mS/cm	6.77	19	33
	17.65	200	Restart .2						

mS/cm

¥ 160 ml/min

MW26-30

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOAs			NA	2/250 mL	Plastic	26EQ 26	1115	EOH 10-13-20
	Mod 537, 24 comp.								

COMMENTS: (QA/QC?)

- HDPE; Silicon tubing used

IDW INFORMATION:

- Trash in dumpster ; Sweep ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-30

PROJECT: PFOA Investigation
LOCATION: Seneca Army Depot

DATE: 3/25/21
INSPECTORS: LT
PUMP #: A01696
SAMPLE ID #: 26ESI20052

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1530	73°F	Sunny	38%	7 mph	45°	clear

MONITORING

INSTRUMENT	DETECTOR
Horiba U-52	Heron skinny dipper, pH
Turbidimeter	Mini TGE 3000

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	16	6	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
Total Depth = 18.70'	0.0 ppm	11.01'	11.15	17.70'	1525

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1530	11.15	150	0	0.79	21.21	0.789	6.84	45	10.8
1540	11.15	150	0.5	0.00	15.76	0.796	6.60	74	4.49
1550	11.14	150	1.0	0.00	15.32	0.798	6.53	83	3.04
1555	11.15	150	1.25	0.00	15.37	0.798	6.51	84	4.37
1600	11.15	150	1.5	0.00	15.43	0.797	6.48	85	4.50
1605	- collect sample								
1610	11.14	150	2.0	0.00	15.19	0.777	6.49	82	2.49

MW 26-30

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFOAs, mod 537 .21 compounds			none	2/250 mL	HDPE	26ESI20052	1605	EGM 5-5-21

COMMENTS: (QA/QC?)

- peri pump / HDPE tubing
- Equip cal. prior to sampling

IDW INFORMATION:

- water purged to ground
- IDW in dumpster

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-31

PROJECT: SEAD
LOCATION: C26 SEAD 26

DATE: 8/17/2020
INSPECTORS: DAN CHAMBERLAIN
PUMP #: 1797
SAMPLE ID #: 26ES2 20027

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
12:30	75	PARTLY CLOUDY	MED	10	180	DRY/DRY	18359	21172
							044681	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
Per pump, Herbie

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	15	5	10	—	—	—
	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)			DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	13.35		13.30	—	—
RADIATION SCREENING RESULTS	PUMP PRIOR TO SAMPLING (cps)	NA			NA	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (military)	WATER LEVEL (TOC)	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
12:15	13.35	150	0.0	3.70	29.06	0.845	4.55	188	37.3
12:25	14.62	100	0.7	0.42	19.30	0.962	6.29	103	11.4
12:30	15.21	100	0.9	0.37	18.75	0.965	6.27	103	12.0
12:35	15.70	100	0.6	0.39	17.85	0.972	6.28	103	7.7
12:40	16.24	100	0.7	0.41	17.62	0.980	6.26	105	1.2
12:45	16.77	100	0.8	0.67	17.68	0.982	6.25	106	0.0
12:50	17.26	100	0.9	0.78	17.46	0.986	6.25	106	0.0
12:55	17.58	100	1.0	0.39	16.98	1.07	6.23	106	0.0
NEXT DAY SAMPLING									
8-18-20 0930	13.65	200	<1.0 gallon	3.15	16.95	1.1 mS/cm	6.51	27	51
	13.3								

MW 26-31

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	PFAAs,			NA	2/250mL	Plastic	26ED 2002	1230	EGA 10-15-20
	Mod 537. 2.1 comp								

COMMENTS: (QA/QC?)

- HDPE; Silica tubing used

IDW INFORMATION:

- FDW in dumpster; GW on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-31

PROJECT: SEAD 26
LOCATION: ROMULUS, NY

DATE: 3/29/21
INSPECTORS: KM
PUMP #: 18212
SAMPLE ID #: 26FSI20053

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM) VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0930	35°F	Snow	—	—	—	Dry

MONITORING INSTRUMENT	MONITORING DETECTOR
MiniRAE3000	Ken
Hach	Hach

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.22576

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	17.57	5	10	NA	NA	NA

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0	10.05	13.22	16.57	0940

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0	10.71	200	0	8.85	12.20	0.956	7.16	131	12.2
10	11.91	160	0.4	1.28	9.74	1.08	6.65	136	3.27
35	11.76	140	0.8	2.98	7.70	1.06	6.45	141	2.90
45	12.25	140	1.2	1.35	7.16	1.08	6.44	140	3.11
50	12.52	140	1.4	1.15	6.95	1.09	6.44	138	3.02
55	12.77	140	1.6	1.09	6.79	1.09	6.44	138	2.74
60	13.02	140	1.8	1.00	6.68	1.09	6.44	136	2.11
65	13.22	140	2.0	1.13	6.63	1.10	6.45	135	1.73
Final				3.59	6.89	1.13	6.79	135	4.26

Pump stopped

MW 26-31

SAMPLING ORDER	PRESERVATIVES	BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
		COUNT/ VOLUME	TYPE			
PFOAS mod 537 21 components	None	2/250 mL	HDPE	26ESE20053	1100	EDM/5-5-21

COMMENTS: (QA/QC?)

Peri pump + HDPE tubing

Equip cal. prior to use.

IDW INFORMATION:

Water dumped on ground

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW 26-320-0N

PROJECT: SENECA ARMY DEPOT
LOCATION: SEAD 26

DATE: 4/21/2021
INSPECTORS: DPC
PUMP #: 10739
SAMPLE ID #: 26ES220035

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS
09:20	26	CLEAR WINDY	Low	15	180	FROZEN

MONITORING INSTRUMENT	MONITORING DETECTOR
SKINNY DIPPER	Hach
HORIBA U-52	Manson

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	39	39	40	~	~	~

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	~	31.7	30.55	69	09:10

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	~		~	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
09:10	31.7	200	0.0	0.44	9.41	0.789	7.53	95	OR
09:12	7.07	200	0.5	0.52	5.87	0.809	8.28	75	OR
09:20	7.76	200	0.9	0.49	6.54	0.799	8.40	54	OR
9:40	8.25	200	1.3	0.79	7.10	0.792	8.57	27	OR
09:50	8.63	200	1.7	0.76	7.42	0.773	8.51	-10	OR
10:00	9.96	200	2.1	0.77	7.64	0.745	8.50	-33	OR
10:06	9.97	200	2.9	0.76	7.55	0.742	8.50	-46	OR
10:20	9.72	200	2.7	0.90	8.96	0.734	8.50	-57	OR
10:30	10.09	200	3.1	0.79	8.13	0.718	8.50	-94	OR
10:40	10.45	200	3.5	0.97	8.76	0.700	8.51	-129	OR
10:48	10.67	200	4.0	0.75	8.77	0.692	8.51	-122	OR
11:00	10.81	200	4.4	0.73	8.78	0.687	8.50	-118	OR
11:10	12.02	200	4.8	0.28	9.21	0.682	8.52	-152	OR
11:20	13.25	200	5.3	0.21	9.66	0.681	8.49	-174	OR
11:30	13.26	200	5.8	0.22	9.77	0.681	8.50	-179	967
11:40	14.27	200	6.0	0.23	9.81	0.681	8.51	-183	734
11:45	13.30	200	6.4	0.24	10.14	0.680	8.52	-187	427
11:50	15.32	200	6.9	0.27	10.36	0.679	8.52	-200	392
11:55	16.48	200	7.4	0.22	10.52	0.678	8.52	-208	374
12:00	16.77	200	7.9	0.22	10.54	0.678	8.52	-209	
12:05	16.92	200	8.3	0.22	10.58	0.678	8.54	-216	317

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-310DN

PROJECT: SEAD 26
LOCATION: SENECA ARMY DEPOT

DATE: 9/14/2021
INSPECTORS: DPC
PUMP #: 10739
SAMPLE ID #: 26PSI20055

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
12:20	75	CLEAR WINDY	LOW	15	200	WET

MONITORING INSTRUMENT	MONITORING DETECTOR
SKINNY DIPPER	HACH 2100Q
HORIBA U-52	ORION 5A

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
HISTORIC DATA	39	39	40	—	—	—

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE	—	3.17	20.85	69	09:10

	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
RADIATION SCREENING DATA	—	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
12:15	17.07	200	8.6	0.23	10.60	0.677	8.51	-213	303
12:20	17.05	200	9.0	0.23	10.65	0.677	8.51	-214	285
12:25	17.08	200	9.4	0.22	10.63	0.677	8.52	-216	260
12:30	17.32	200	9.8	0.23	10.67	0.675	8.52	-216	245
12:35	17.76	200	10.2	0.24	10.67	0.674	8.51	-217	238
12:40	17.93	200	10.6	0.23	10.72	0.674	8.51	-218	225
12:45	18.15	200	10.9	0.22	10.79	0.674	8.52	-219	217
12:50	19.24	200	11.4	0.22	10.87	0.674	8.52	-220	221
12:55	19.66	200	11.8	0.22	10.95	0.674	8.52	-221	236
13:05	20.55	200	12.6	0.31	11.28	0.675	8.49	-182	

MW 26-320-DN

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFOA 71 PARAMETER MOD 537			NA	2X250mL	HDPE	26ESD20055	13:00	EDM 5-6-21

COMMENTS: (QA/QC?)

EB SEDA PFAS 00016 COLLECTED AT 15:00

FB SEDA PFAS 01011 COLLECTED AT 13:05

Equip cal. prior to use.

IDW INFORMATION:

PURGE WATER DUMPED ON THE GROUND

SHEET 1 of 3

~~Page 1 of 3~~

SAMPLING RECORD - GROUNDWATER

DUP 50'
DN 70'

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-32D

PROJECT: SENECA ARMY DEPOT
LOCATION: ROMULUS, N.Y.
SEAD 26

DATE: 8/18/2020
INSPECTORS: JHG
PUMP #:
SAMPLE ID #: 26ES120078 ~~26ES120079~~

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0-360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1300	80	SUNNY	MOD.	LIGHT	0	DRY-DUSTY	25335	15265

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

Masson, Hess

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	79	~~40~~ 39	40	TURB	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	NA	9.96	19.15	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm or umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1325	9.95	320		0.43	23.47	0.585	8.6	-133	394
1330	13.05	320		↓	↓	↓	↓	↓	
1340	13.55	320		0.34	23.92	0.579	8.61	-142	0.0
1345	13.75	320		0.32	21.80	0.583	8.59	-152	00
1350	14.1	340	6 GALLONS	0.37	22.98	0.591	8.54	-164	00
1355	15.0	340		0.28	22.56	0.585	8.59	-225	00
1400	15.35	360		0.23	21.13	0.586	8.64	-249	00
1405	16.1	360		0.23	21.74	0.565	8.61	-256	00
1410	17.8	360		0.18	19.96	0.548	8.63	-270	1000
1415	17.8	360	1	0.20	20.74	0.563	8.54	-265	831
1420	18.3	360		0.19	20.03	0.552	8.55	-271	930
1435	18.7	360		0.23	22.73	0.565	8.54	-273	988
1440	19.9	360	6 GALLONS	0.20	21.44	0.547	8.62	-283	999
1445	19.1	360		0.21	22.62	0.557	8.54	-280	853
1450	19.1	360		0.22	22.76	0.556	8.61	-285	797
1500	18.9	360		0.23	22.79	0.560	8.57	-285	632
1605	18.05	~~360~~ 340		0.17	20.72	0.561	8.61	-289	691
1510	18.5	220		0.21	21.41	0.561	8.59	-281	577
1515	18.67	240		0.16	21.33	0.564	8.60	-288	602
520	18.5	240	12 GALLONS	0.19	22.18	0.561	8.56	-289	489
25	18.33	240		0.19	22.4	0.559	8.60	-291	487
30	18.0	240		0.18	22.11	0.548	8.63	-294	462
	18.05	200		0.18	22.13	0.554	8.53	-288	467
	18.0	200	1.25 GALLONS	0.21	22.93	0.555	8.56	-293	395
	18.35	200		0.15	22.94	0.556	8.64	-297	448

40

40

NEEDS SCREEN

SHEET 2 of 3

UP 50'

DN 70'

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-320 MP
PROJECT: SENECA ARMY DEPOT LOCATION: ROMULUS, N.Y		DATE: 8/18-19/2020 INSPECTORS: J. GOLDTHWAIT PUMP #: 610272 SAMPLE ID #: 26ES120028 ~~26ES120029~~

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1545	80	SUNNY	MOD.	LIGHT		DRY-DUSTY	253335	152165
							Manson, Marsia	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	—	~~40~~ 39	40	Tws	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	NA	9.95	19.5	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
	NA			NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND mS (umhos) CM	pH	ORP (mV)	TURBIDITY (NTU)
1550	19.15	240		0.14	20.37	0.545	8.58	-292	380
1555	19.25	240		0.16	21.18	0.548	8.59	-294	341
1600	19.1	240		0.17	22.3	0.552	8.56	-293	295
1605	19.25	240		0.18	22.16	0.545	8.58	-292	303
1610	19.35	240		0.18	21.90	0.547	8.60	-296	304
1615	19.5	240		0.17	21.98	0.541	8.60	-297	293
1620	19.4	240		0.17	22.11	0.539	8.61	-296	298
1625	19.4	240		0.18	22.3	0.537	8.63	-296	303
1630	19.15	240		0.19	22.79	0.541	8.57	-295	295
1636	SAMPLING			0.19	22.69	0.543	8.59	-297	293

MW 26-32D

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	mw 537 Plus 21 compounds			NA	2/250 mL	Plastic	26ES2 20028	1636	RDM/ 8-19-20

COMMENTS: (QA/QC?)

- Used SS mansom pump w/ HDPE tubing.
- Collected sample from upper section of screen C39-58' Spl.
- HDPE & silicon tubing used

IDW INFORMATION:

- Purge water disposal of on ground : FDW in dumpster

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-32D-UP

PROJECT: Seneca Army Depot - SEAD 26
LOCATION: Romulus, NY

DATE: 3/31/21
INSPECTORS: R. Inclima
PUMP #: 24737
SAMPLE ID #: 26ESI20054

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1210	52°F	Rain	82%	11 mph	S	wet
1500	50°F	Cloudy	81%	10 mph	WSW	damp/wet

MONITORING INSTRUMENT	MONITORING DETECTOR
Horiba	PID
Turbidimeter	Heron

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1 well volume = 11.7 gal.

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (~~TOC~~)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	79.53'	39' bgs	40	N/A	N/A	N/A

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	0.0 ppm	7.53'	10.62'	49'	1240

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND mS/cm (~~umhos~~)	pH	ORP (mV)	TURBIDITY (NTU)
10	9.11	380	1.0	1.16	11.94	0.682	8.04	-46	575
20	9.20	190	1.5	0.61	11.58	0.687	8.11	-79	>1000
30	9.32	150	1.9	0.44	11.74	0.692	8.18	-137	>1000
40	9.07	150	2.3	0.34	12.42	0.699	8.19	-167	>1000
50	9.64	260	3.0	0.34	12.47	0.700	8.25	-204	937
60	9.82	190	3.5	0.38	12.43	0.701	8.26	-217	616
70	10.00	225	4.1	0.29	12.38	0.700	8.30	-234	454
80	10.09	190	4.6	0.27	12.48	0.701	8.31	-240	292
90	10.20	190	5.1	0.24	12.38	0.701	8.33	-247	230
100	10.38	150	5.5	0.25	12.36	0.701	8.32	-249	180
110	10.47	190	6.0	0.25	12.44	0.702	8.32	-249	138
120	10.66	190	6.5	0.23	12.40	0.701	8.33	-251	124
130	10.61	190	7.0	0.23	12.40	0.702	8.33	-253	115
140	10.42	150	7.4	0.21	12.56	0.703	8.35	-257	124
150	10.54	225	8.0	0.20	12.37	0.702	8.34	-259	108
160	10.62	190	8.5	0.19	11.57	0.705	8.36	-260	113
Post-sample —	10.65	—	~9.6	1.50	10.67	0.699	8.29	-204	111

MW26-320-UP

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
	PFOA, Mod 537, + 21 compounds			-	2/250mL	HDPE	26ESI20054	1535	EOM/5-6-21

COMMENTS: (QA/QC?)

PID Headspace: 0.0 ppm

- sampled using monsoon pump + HDPE tubing
- Varying flow rate result in changing head pressure above monsoon pump; flow rate recorded is average for that time interval; constantly adjusting power level on pump control box.

- Equip Cal prior to use.

See MW26-230 sampling log comments for calibration info.

IDW INFORMATION:

- waste water dumped on ground.
- PPE, tubing, solid waste in dumpster.

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW26-32D

PROJECT: SEAD
LOCATION: SEAD 25

DATE: 8/19/2020
INSPECTORS: JHG
PUMP #: 610272
SAMPLE ID #: 26ES1200209

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
	72	SUNNY	MOD	LIGHT	—	DRY	253355	152665
							Horiba, Aut Pump	

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
Marsam

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	79	~~40~~ 39	40	—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START
	NA	12.90	15.15	—	—

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	NA	NA

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND mS (umhos) cm	pH	ORP (mV)	TURBIDITY (NTU)
0910	12.9	—		0.38	12.47	0.652	8.96	-178	1000
0920	14.7	220		0.34	13.95	0.631	9.00	-171	0.0
0925	14.2	220		0.44	14.48	0.634	9.04	-202	0.0
0940 ~~0930~~	14.2	275		0.58	15.36	0.606	9.04	-244	920
0950	14.05	260		0.58	15.75	0.597	9.12	-261	643
1000	14.55	300		0.48	16.46	0.592	9.08	-272	459
1005	14.75	300		0.45	15.72	0.590	9.06	-277	405
1010	15.15	350		0.31	15.50	0.583	9.10	-280	396
1020	15.55	350		0.30	15.64	0.580	9.08	-283	310
1025	16.10	350		0.25	15.33	0.584	9.10	-287	264
1030	16.2	300		0.26	15.96	0.582	9.10	-288	227
1035	16.2	300		0.25	15.95	0.576	9.12	-290	191
1040	16.2	340		0.26	15.31	0.582	9.12	-289	210
1045	16.35	340		0.26	14.84	0.579	9.11	-290	186
1050	16.1	220		0.30	15.65	0.581	9.07	-289	169
1055	16.0	220		0.30	15.59	0.582	9.05	-289	202
1100	16.0	220		0.28	15.53	0.582	9.07	-289	190
1105	15.7	220		0.29	16.40	0.586	9.06	-290	164
1110	15.4	220		0.28	16.74	0.585	9.07	-291	193
1120	15.45	220		0.20	17.02	0.580	9.03	-289	171
1125	16.2	260		0.21	14.84	0581	9.09	-294	155
1130	15.5	260		0.19	15.43	0.581	9.08	-295	124
1140	16.4	260		0.18	15.74	0.578	9.07	-295	117
1145	15.31	260		0.19	15.15	0.579	9.09	-298	116
1150	15.2	260		0.22	16.37	0.577	9.07	-297	105
1155	15.15	260		0.22	16.40	0.579	9.07	-297	113

6 GALLONS

6 GALLONS

~6 gal

MW26-320-DN

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	PFAS, Mod 537, 21 comp			MA	2/250 mL	Plastic	2565 2566 2029	1205	EJA - 10/5/22

COMMENTS: (QA/QC?)

12:05 took (2) two bottle samples

- Take sample in lower part of screen. (55'-79' spl)
- HDPE : Silicon tubing used

IDW INFORMATION:

- flow in dumpster : gw on ground

APPENDIX E Well Development Logs

Fire House Well Development Logs

FH 01

WELL DEVELOPMENT LOG

Well ID: ~~FH-02~~ mw

Date	5/17/19	Field Personnel	R. Inclima	Weather	Sunny; 68°
Site Name	Seneca Army Depot	Contractor	Parratt Wolff	Project No.	74616 74.08000
Site Location	FH 01	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	15.85	ft.	Date(s) Installed	5/16/19	Date(s) Developed	5/17/19
Depth to Bottom (Final)*		ft.	Driller	Mark - Parratt Wolff	Development Time	Start: 10:00
Depth to Water (Initial)*	7.49	ft.	Well Diameter	2" in.		Stop: 14:53
Depth to Water (Final)*		ft.	Casing Volume	1.33 gal.		Total:

* Measuring point: TOC

Pump setting* (intake):

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start		17.88	7.77	0.720	>1000		8.33	brown, turbid
1	0.9	18.43	7.29	0.720	>1000	0.045	8.45	brown, turbid
2	1	20.77	7.46	0.678	>1000	0.05	8.40	brown, turbid
3	0.6	20.08	7.38	0.694	>1000	0.03	8.40	brown, turbid
4	0.6	19.21	7.32	0.704	>1000	0.03	8.41	brown, turb.
5	0.6	17.40	7.26	0.718	>1000	0.03	8.43	brown, turb
6	1	14.66	7.19	0.721	845	0.05	8.64	cloudy brown
7	1.2	13.91	7.25	0.725	600	0.06	8.69	cloudy gray
8	1.8	13.76	7.15	0.728	401	0.09	8.70	slightly cloudy gray
9	1.8	13.81	7.48	0.723	249	0.09	8.60	slightly cloudy
10	0.5	16.08	7.54	0.688	171	0.03	8.50	clearish
	0.8	14.24	7.27	0.732	119	0.04	8.60	clearish
	1	13.79	7.37	0.729	97.8	0.05	8.60	clearish

Dumped @ 4.7 gal.; increased pump setting

Dumped @ 4.8 gal

Development Water Characteristics:

Total volume of Development water removed: ~12 gal.

Physical appearance at start

Color: Brown; turbid

Odor: none

Sheen/Free Product: none

Physical appearance at end

Color: clearish

Odor: none

Sheen/Free Product: none

NOTES:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: I-H-02

Date	5/16/19	Field Personnel	R. Inclima	Weather	Sunny; 65°; slight breeze
Site Name	Seneca Army Depot	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	FH-02	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	14.98	ft.	Date(s) Installed	5/16/19		Date(s) Developed	5/16/19
Depth to Bottom (Final)*	14.90	ft.	Driller	Mark Eaves		Development Time	Start: 11:20
Depth to Water (Initial)*	8.19	ft.	Well Diameter	2	in.		Stop:
Depth to Water (Final)*	12.95	ft.	Casing Volume		gal.		Total:

* Measuring point: Casing

Pump setting* (intake):

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start		14.52	6.77	0.716	>1000		10.56	br; turbid
1 20	1	19.99	7.05	0.583	>1000	0.05	10.64	br; turbid
2 40	1	19.83	7.41	0.619	>1000	0.05	10.79	lgt br; turbid
3 60	0.8	20.56	7.40	0.646	>1000	0.04	10.76	lgt br; turbid
4 80	0.4	19.24	7.33	0.662	>1000	0.02	10.78	lgt br; turbid
5 100	0.5	19.47	7.43	0.680	903	0.025	10.85	lgt br; turbid
6 120	0.5	18.96	7.24	0.684	577	0.025	10.94	cloudy-gray
7 140	0.5	19.49	7.37	0.702	527	0.025	10.91	cloudy-gray-brown
8 160	0.6	17.95	7.27	0.694	426	0.03	11.52	cloudy-light brown
9 180	0.4	18.68	7.33	0.723	360	0.02	11.11	cloudy-light brown
10 200	0.3	19.98	7.34	0.715	241	0.015	10.71	cloudy-slight brown
11 220	0.3	20.01	7.31	0.703	167	0.015	10.99	cloudy-slight brown
→ 12 240	1.2	15.53	7.25	0.711	>1000	0.06	13.00	brown/turbid
13 260	1	15.59	7.29	0.735	>1000	0.05	13.09	light br; turbid
14 280	0.3	16.44	7.25	0.721	903	0.015	13.21	light br; cloudy
15 300	0.4	16.56	7.25	0.738	636	0.02	12.95	light br; cloudy

(increased pump setting)

Development Water Characteristics:

Total volume of Development water removed: *8 gallons

Physical appearance at start		Physical appearance at end	
Color	Brown	Color	Yellowish
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES: Turbidity did not stabilize, will try again

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: FH-02

Date	5/17/19	Field Personnel	R. Inclima	Weather	Sunny, 68°
Site Name	Seneca Army Depot	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	FH-02	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	5.08	ft.	Date(s) installed	5/6/19	Date(s) Developed	5/16 - 5/17/19
Depth to Bottom (Final)*		ft.	Driller	Parratt-Wolff	Development Time	Start: 10 38
Depth to Water (Initial)*	8.60'	ft.	Well Diameter	2 in.		Stop: 14:40
Depth to Water (Final)*		ft.	Casing Volume	1.04 gal.		Total:
* Measuring point	TOC		Pump setting* (intake)			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start		20.51	7.49	0.660	663		9.54	cloudy brown
1	0.3	18.60	7.35	0.704	>1000	0.015	10.48	lgt brn; turb.
2	0.5	19.75	7.31	0.714	>1000	0.025	10.64	lgt. brn; turb.
3	0.4	19.11	7.27	0.737	924	0.02	10.63	gray-brn
4	0.3	16.03	7.20	0.749	572	0.015	10.74	gray-cloudy
5	1	16.16	7.19	0.771	363	0.05	11.97	gray-cloudy
6	0.5	16.46	7.23	0.781	218	0.025	11.33	slightly cloudy
7	0.4	15.74	7.23	0.783	211	0.02	11.35	slightly cloudy gray
8	0.4	15.04	7.51	0.774	171	0.02	11.70	slightly cloudy
9	0.75	16.71	7.36	0.756	170	0.04	12.07	slightly cloudy
10	0.5	14.99	7.33	0.790	199	0.025	12.26	clearish
	0.8	15.08	7.38	0.779	161	0.04	12.09	clearish

increased Pump setting

Dumped @ 4.7gal

Development Water Characteristics:

Total volume of Development water removed: ~6 gal.

Physical appearance at start
- Color: Cloudy brown
- Odor: none
- Sheen/Free Product: none

Physical appearance at end
- Color: clearish
- Odor: none
- Sheen/Free Product: none

NOTES: Second attempt, turbidity not below 100, but less than previous try

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: FH-03

Date	5/28/19	Field Personnel	A. Cook	Weather	50's Rainy
Site Name	SEDA	Contractor	-	Project No.	749674.08000
Site Location	Firehouse - 03	Evacuation Method	# Peri Pump		

Well information:

Depth to Bottom (Initial) *	16.06'	ft.	Date(s) Installed	5/ /19	Date(s) Developed	5/28/19 +5/29/19
Depth to Bottom (Final)*		ft.	Driller	Mark Eaves	Development Time	Start:
Depth to Water (Initial)*	11.55'	ft.	Well Diameter	2 in.		Stop:
Depth to Water (Final)*		ft.	Casing Volume	gal.		Total: 40min
* Measuring point	TOC		Pump setting* (intake)			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	-	10.75	6.92	1.28	49.1	-	Bottom	Clear
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Purged Dye 1.25 gal ~40 min 5/29/19

Development Water Characteristics:

Total volume of Development water removed: _____

Physical appearance at start		Physical appearance at end	
Color	Clear	Color	Clear
Odor	None	Odor	None
Sheen/Free Product	Slight Iron	Sheen/Free Product	None

NOTES: Well dried on 5/28/19 after pumping from 30-40minutes and 1.5 gallons. Develop again on 5/29/19. Well too dry! will attempt to sample anyway

Geologist Signature: [signature]

WELL DEVELOPMENT LOG

Well ID: MWFH-04

Date	9/12/19	Field Personnel	RD/CM	Weather	59°; light rain
Site Name	Seneca Army Depot	Contractor	Parratt Wolff	Project No.	749674.08020
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	17.84	ft.	Date(s) Installed	9/10/19	Date(s) Developed	9/12/19
Depth to Bottom (Final)*	17.72	ft.	Driller	Parratt Wolff	Development Time	Start: 10:20
Depth to Water (Initial)*	9.30	ft.	Well Diameter	2 in.		Stop: 11:53
Depth to Water (Final)*	9.33	ft.	Casing Volume (RJ)	~~0.39~~ 0.163 gal.		Total: 93 minutes

* Measuring point GL Pump setting* (intake) Medium

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start							9.30	dark brown
1	1.~~9~~4				>1000	0.36	9.30	dark brown
2	2.8				>1000	0.36	9.30	dark brown
3	4.2				>1000	0.36	9.30	brown
4	5.6				>1000	0.36	9.24	brown
5	STOPPED PUMP - MANUAL PURGE - 10:45							
6	7				>1000	0.36	9.22	brown
7	8.4				>1000	0.36	9.30	gray-brown
8	9.8				>1000	0.36	9.32	gray brown
9	11.2				>1000	0.36	9.34	gray
10	~~12.~~23.8				>1000	0.36	9.33	gray
	25.2				450	0.36	9.33	cloudy

10:50

Left for 35 minutes to help @ another well; kept pump running

Development Water Characteristics:

Total volume of Development water removed: ~ 25.2 gallons

Physical appearance at start		Physical appearance at end	
Color	dark brown	Color	cloudy gray
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES: 6.96 = 5 well volumes; 13.9 = 10 well volumes

- none surged screen interval, then started pump at 10:20

- No Horiba @ this time

$\frac{225 \text{ mL}}{10 \text{ s}} \cdot \frac{1356 \text{ mL}}{60 \text{ s}}$

$10x = 13560$

Geologist Signature: Robert W. Dale

WELL DEVELOPMENT LOG

Well ID: FH-04

Date	9/18/19	Field Personnel	RI	Weather	60°; sunny
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	17.25	ft.	Date(s) Installed	9/16/19	Date(s) Developed	9/12 & 9/18/19
Depth to Bottom (Final)*	17.27	ft.	Driller	Parratt Wolff	Development Time	Start: 0925
Depth to Water (Initial)*	8.73	ft.	Well Diameter	2 in.		Stop: 1040
Depth to Water (Final)*	8.85	ft.	Casing Volume	0.163 gal.		Total: 75 min
* Measuring point	top of casing		Pump setting* (intake)	0.25 gal/min		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	-	15.09	7.60	1.32	>1000	0.25	8.12	brown
1	2.5	15.01	7.22	1.34	>1000	0.25	8.82	gray-brown
2	8.75	14.87	7.37	1.39	806	0.25	8.82	gray
3	9	14.93	7.40	1.40	412	0.25	8.82	cloudy
4	11	14.91	7.58	1.40	379	0.25	8.82	cloudy
5	12.5	15.03	7.52	1.40	275	0.25	8.83	cloudy
6	15	14.93	7.52	1.41	189	0.25	8.83	clearish
7	17.5	14.79	7.55	1.41	62.8	0.25	8.85	clear
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: ~18.5 gal

Physical appearance at start
- Color: brown
- Odor: none
- Sheen/Free Product: none

Physical appearance at end
- Color: clear
- Odor: none
- Sheen/Free Product: none

NOTES: Well volume: 1.38; 5 well volumes: 6.9; 10 well volumes: 13.8
0925 - Manual Purge ~1 gallon; started waterra 0930
- Bottom of well felt solid compared to previous measurement

Geologist Signature:

$\frac{160}{10} = \frac{X}{60}$ $10X = 9600$ $X = 960\,mL = 0.25$ gal/min

WELL DEVELOPMENT LOG

Well ID: FH-05

Date	10/16/19	Field Personnel	JM, FM	Weather	~~FH-05~~
Site Name	Seneca Army Depot	Contractor	Parsons	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	Waterra Pump		

Well information:

Depth to Bottom (Initial) *	19.27 ft.	Date(s) Installed		Date(s) Developed	10/16/19 - 10/17/19
Depth to Bottom (Final)*	ft.	Driller		Development Time	Start: 0847 (10/16/19)
Depth to Water (Initial)*	~~9.44~~ 9.84 ft.	Well Diameter	2 in.		Stop: ~~1620~~ 1710 (10/17/19)
Depth to Water (Final)*	ft.	Casing Volume	~1.7 gal.		Total: JM
* Measuring point	Top of inner casing	Pump setting* (intake)			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity ~~mS~~ uS/cm	Turbidity (NTU)	Approximate Flow Rate ~~mL/min~~ (gal/min)	Depth to Water (ft.)	Appearance of Water
Start								
* 1	1.7	13.7	6.71	1,330	>1000	500	16.89	turbid
2	2.3	14.7	7.22	1,240	915	400	19.05	cloudy
* 3	3.0							
4	5.25							
5								
6								
7								
8								
9								
10								

10/16 ↓ 10/17

Development Water Characteristics:

Total volume of Development water removed: ~~3 gal~~ JM 5.25 gal

Physical appearance at start		Physical appearance at end	
Color	brown, turbid	Color	brown, cloudy
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES: Development equipment: Delrin SBD-25 Surge Block, Delrin D25 Foot Valve, HDPE tubing, Waterra HydroLift II
Monitoring equipment: Heron Skinny Dipper (DTW), YSI (water quality measurements)

* surged for 10 min before purging
@ 0930, purged dry after purging ~0.7 gallons. Let recharge & purge on multiple attempts
@ 1620 purged an additional 0.70 gallons - went dry, water turbid

Geologist Signature: [signature]

10/16/19

6/23-24/20

WELL DEVELOPMENT LOG

Well ID: MWFH-06

Date	6/23/20 6/25	Field Personnel	MCH/AC	Weather	Sunny, 80°F
Site Name	Seneca Army Depot	Contractor	NYEG	Project No.	47901.0800
Site Location	Firehouse	Evacuation Method	Peri Pump		

Well information:

Depth to Bottom (Initial) *	17.79/17.91/18.16 ft.	Date(s) Installed	6/17/20	Date(s) Developed	6/23-24/20 6/25
Depth to Bottom (Final)*	18.17 ft.	Driller	S. Boden	Development Time	Start: 12:45 08:00
Depth to Water (Initial)*	16.81/17.42 ft/17.14	Well Diameter	2 in.		Stop: 12:48
Depth to Water (Final)*	18.17 ft.	Casing Volume	10 gal.		Total: 3 min
* Measuring point	TOC	Pump setting* (intake)	16.79		15 min → 40 min 16 min

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0.25					100mL	17.5	Turbid
1								
6/24 6/25 2	400mL	NA				100mL	17.9	Clearish
3								
6/25 4	300 mL	17.79	7.73	0.756	21000	300mL/5min		Cloudy
5	300 mL	18.07	7.66	0.753	779	300mL/5min	18.17	Cloudy
6								
7								
8								
9								
10								

Well Dried

Development Water Characteristics:

Total volume of Development water removed: ~700mL

Physical appearance at start		Physical appearance at end	
Color	Brown	Color	Grey
Odor	NA	Odor	none
Sheen/Free Product	NA	Sheen/Free Product	none

NOTES: Ran well dry 3 times, minimal water each time, need rain to collect sample

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: MWFH-07

Date	06/22/20 - 6/23/20	Field Personnel	AKS MCH	Weather	Sunny, 86°F
Site Name	Seneca Army Depot	Contractor		Project No.	749674
Site Location	Fire House	Evacuation Method	Waterra Pump		

Well information:

Depth to Bottom (Initial) *	17.9 ft.	Date(s) Installed		Date(s) Developed	
Depth to Bottom (Final)*	ft.	Driller		Development Time	Start: 13:45
Depth to Water (Initial)*	8.2 ft.	Well Diameter	4 in.		Stop:
Depth to Water (Final)*	ft.	Casing Volume	10 gal.		Total:
* Measuring point	TOC	Pump setting* (intake)	15.9 ft		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0.15	26.27	7.86	0.577	>1000	200	8.2	Turbid white
1	0.50	25.24	7.48	0.690	>1000	200	11.03	"
2	1.00	24.71	7.34	0.675	>1000	200	11.17	"
3	1.25	23.65	7.26	0.647	>1000	200	11.25	"
4	2.00	23.27	7.30	0.645	>1000	300	11.3	"
5	2.75	25.31	7.40	0.560	964	300	12.07	less "
6	4.00	25.46	7.39	0.551	>1000	400	15.73	"
7								
8								
9								
10								
6/23								
09:30	0.25	18.77	7.39	0.705	>1000	300	8.31	Turbid
09:45	1.0	19.41	7.19	0.715	>1000	300	11.23	Turbid
10:00	2.0	17.49	6.95	0.719	>1000	400	12.31	Turbid
10:15	3.0	20.21	7.11	0.718	>1000	150	14.95	Turbid
10:30	4.0	20.84	7.13	0.721	>1000	200	15.91	Turbid

Well Dry

Well Dry

Development Water Characteristics:

Total volume of Development water removed: 8

Physical appearance at start
- Color: Turbid Cloudy
- Odor: NA
- Sheen/Free Product: NA

Physical appearance at end
- Color: Brown/Cloudy
- Odor: NA
- Sheen/Free Product: NA

NOTES:

Geologist Signature: MCH

5 Well Volume = 7.85 gallons

WELL DEVELOPMENT LOG

Well ID: MWFH-07

Date	6/24/20	Field Personnel	MCH	Weather	Sunny, 70's
Site Name	Seneca Army Depot	Contractor		Project No.	749674.0PAW
Site Location	Fire House	Evacuation Method	Waterra Pump		

Well information:

Depth to Bottom (Initial) *	17.79 ft.	Date(s) Installed		Date(s) Developed	6/22-24/20
Depth to Bottom (Final)*	17.78 ft.	Driller		Development Time	Start: 0900
Depth to Water (Initial)*	8.33 ft.	Well Diameter	4 in.		Stop:
Depth to Water (Final)*	15.67 ft.	Casing Volume	10 gal.		Total:
* Measuring point	TOC	Pump setting* (intake)	16.79		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0.1	15.32	7.09	0.741	>1000	500	9.46	Cloudy
1	1.25	17.10	7.07	0.748	>1000	200	11.65	"
2	2.0	17.83	6.98	0.741	>1000	175	13.22	"
3	3.0	18.25	6.95	0.742	980	150	13.71	"
4	3.5	19.51	7.17	0.739	408	125	13.84	"
5	4.0	18.33	7.31	0.736	294	150	14.45	"
6	4.5	18.18	7.35	0.731	643	200	15.31	"
7	5.0	18.22	7.11	0.736	375	200	15.49	"
8	5.75	18.11	7.08	0.733	233	200	15.83	"
9	6.50	18.45	7.01	0.741	283	200	16.05	"
10	7.25	18.67	7.07	0.745	122	200	16.10	clear
11	8.00	18.69	7.13	0.746	89.2	175	16.12	"
End Purge → well dry								

Development Water Characteristics:

Total volume of Development water removed: 8+8=16 gallons

Physical appearance at start		Physical appearance at end	
Color	Cloudy/Brown	Color	
Odor	NA	Odor	
Sheen/Free Product	NA	Sheen/Free Product	

NOTES:

Geologist Signature: MCH

WELL DEVELOPMENT LOG

Well ID: MW FM-08

Date: 06/22/2020 - 6/23/20 | Field Personnel: AKS MCH | Weather: Sunny 79°F
Site Name: Seneca Army Depot | Contractor: | Project No.: 74966.0000
Site Location: Fire House | Evacuation Method: Waterra Pump

Well information:

Depth to Bottom (Initial) *: 17.75 ft. | Date(s) Installed: | Date(s) Developed: 6/22-24/20
Depth to Bottom (Final)*: 17.80 ft. | Driller: S. Bodtm | Development Time: Start: 9:45
Depth to Water (Initial)*: 7.64/7.5 ft. | Well Diameter: 4 in. | Stop:
Depth to Water (Final)*: 16.06 ft. | Casing Volume: 10 gal. | Total:

* Measuring point: TOC | Pump setting* (intake): 15.75 ft.

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0.0	20.8	6.43	0.698	>1000.0	250	8.65	Turbid Cloudy
1	0.5	23.45	7.16	0.509	>1000.0	250	10.52	"
2	1.0	22.75	7.53	0.684	>1000.0	250	11.3	"
3	1.5	24.85	7.46	0.707	>1000.0	250	11.88	"
4	2.0	24.37	7.58	0.624	>1000.0	250	11.97	"
5	2.5	24.06	7.77	0.696	>1000.0	250	12.05	"
6	3.0	25.67	7.81	0.697	>1000.0	250	12.24	"
7	3.5	26.48	7.75	0.693	>1000.0	250	12.32	"
8	4.0	26.37	7.73	0.694	>1000.0	250	12.81	"
9	4.5	26.30	7.82	0.695	>1000.0	250	14.18	"
10	5.0	25.92	7.81	0.697	>1000.0	250	15.32	"
12:28 →	Well dried							
6/23 08:00	0.5	19.44	7.50	0.620	>1000.0	200	8.92	Turbid
08:25	1.0	18.59	7.33	0.708	>1000.0	200	11.20	"
08:40	2.0	19.63	7.35	0.710	>1000	125	13.15	"
well Dried → 08:53	2.5						15.17	"
Restart → 13:35	3.0	20.44	7.49	0.663	>1000	400	9.21	Turbid
13:50	4.0	21.03	7.22	0.703	>1000	350	13.67	"
14:02	4.5					100	16.13	Turbid

Development Water Characteristics:

Total volume of Development water removed: 9.5

Physical appearance at start
Color: Turbid Cloudy
Odor: NA
Sheen/Free Product: NA

Physical appearance at end
Color: Brown Cloudy
Odor: NA
Sheen/Free Product: NA

NOTES:

Geologist Signature: MCH

W C X 0.162

1 well V = 1.69 gallons
5 well V's = 8.48 gallons

WELL DEVELOPMENT LOG

Well ID: MWFH-08

Date	6/24/20	Field Personnel	MCH	Weather	Sunny, 70's
Site Name	Seneca Army Depo	Contractor		Project No.	749674.08
Site Location	Fire House	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	17.69 ft.	Date(s) Installed		Date(s) Developed	6/22-24/20
Depth to Bottom (Final)*	17.71 ft.	Driller		Development Time	Start: 0750
Depth to Water (Initial)*	7.63 ft.	Well Diameter	4 in.		Stop: 0855
Depth to Water (Final)*	16.80 ft.	Casing Volume	10 gal.		Total: 01:05
* Measuring point	TOC	Pump setting* (intake)	16.80		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0.25	16.38	7.52	0.694	>1000	500	9.53	Turbid
1	1.0	16.42	7.13	0.715	>1000	250	11.37	"
2	2.0	16.65	7.11	0.727	>1000	200	13.71	"
3	2.5	17.10	7.20	0.725	851	150	15.02	Cloudy
well dry → 4	2.75						16.80	"
5								
6								
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: 9.5 + 2.75 = 12.25 gal

Physical appearance at start		Physical appearance at end	
Color	Brown/Cloudy	Color	Brown/Cloudy
Odor	NA	Odor	NA
Sheen/Free Product	NA	Sheen/Free Product	NA

NOTES:

Geologist Signature: MCH

WELL DEVELOPMENT LOG

Well ID: FTAMW-05

Date	8/31/2020	Field Personnel	DAN CHAMBERLAIN	Weather	MID 70'S PARTLY CLOUDY
Site Name	SENECA ARMY DEPOT	Contractor	PARSONS	Project No.	749679
Site Location	OLD FIRE HOUSE	Evacuation Method	PERISTALTIC		

Well information:

Depth to Bottom (Initial) *	22.35 ft.	Date(s) Installed	8-4-20	Date(s) Developed	8/31/2020
Depth to Bottom (Final)*	22.35 ft.	Driller	NEG	Development Time	Start: 11:25
Depth to Water (Initial)*	20.73 ft.	Well Diameter	4 in.		Stop: see below
Depth to Water (Final)*	22.40 ft.	Casing Volume	1.04 gal.		Total: 6
* Measuring point	PVC RISER	Pump setting* (intake)	22.20		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0	17.31	6.85	1.33	24.7	400	20.73	CLEAR
1	1.5	14.55	7.19	1.49	0.0	400	22.10	CLEAR
2	2.0	18.20	6.97	1.44	0.0	400	22.35	CLEAR
3	STILL DRY						CORK	
4	0.01	—	—	—	—	—	22.4	CLEAR
5								
6								
7								
8								
9								
10								
0650	DRY - NO READINGS		- NO WATER					
		21.23	6.99	0.801	18.5	—	NO READ	CLEAR

9/1/20
STATIC 9/1/20 22.4' Water level
9/2/20 22.4'
9/3/20 NO WATER @ 22.35

Development Water Characteristics:

Total volume of Development water removed: 2.01

Physical appearance at start		Physical appearance at end	
Color	~~NA~~ Turbid	Color	Turbid
Odor	~~NA~~ None	Odor	~~NA~~ None
Sheen/Free Product	~~NA~~ None	Sheen/Free Product	None

NOTES: ~~No parameters collect~~
- See Todd Belanger's development sheet for 5 well vols and other details

Geologist Signature: [signature] for DC

1 of 2

WELL DEVELOPMENT LOG

Well ID: MW-FR-90

Date	8/10/2020	Field Personnel	DAN CHAMBERLAND	Weather	HZGH 80's, clear/BREEZY
Site Name	SENECA ARMY DEPOT	Contractor	Parsons	Project No.	749674 cfsm
Site Location	Fire House	Evacuation Method	SS MONSOON / PFA free		

Well information:

Depth to Bottom (Initial) *	62.0 ft.	Date(s) Installed	8-6-20	Date(s) Developed	8/10/2020
Depth to Bottom (Final)*	62.0 ft.	Driller	MEG	Development Time	Start: 11:30
Depth to Water (Initial)*	27.0 ft.	Well Diameter	4 in.		Stop: -
Depth to Water (Final)*	63.68 ft.	Casing Volume	22.4 gal.		Total: -
* Measuring point	PVC CASING - TOC	Pump setting* (intake)	61, 52, 42		see note below

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	5	17.00	5.91	0621	OR	3GPM	27.0	MUDDY
1	25	21.28	7.34	0.633	OR	0.4GPM	58.6	MUDDY
2	26	15.85	5.23	0.782	OR	0.1	54.16	MUDDY
8/11/2020 08:40 08:58	27	14.96	6.43	0.759	OR	0.1	55.89	TURBID
4 09:02	28	15.81	6.88	0.746	OR	0.1	57.24	TURBID
5 09:06	29	15.75	7.01	0.749	OR	0.3	59.65	TURBID
6 09:12	30	15.20	7.19	0.753	OR	0.2	60.00	TURBID
7 09:20	31	14.28	7.50	0.681	OR	0.1	60.50	TURBID
8 09:28	32	14.87	7.58	0.605	OR	0.1	61.20	MUDDY
8/12/2020 09:20 9	33	16.43	6.69	0.723	OR	0.2	57.62	MUDDY
08:25 10	34	14.17	7.65	0.720	OR	0.2	60.31	MUDDY
08:30	35	13.95	7.73	0.720	OR	0.2	61.50	MUDDY
08:36	36	13.71	7.84	0.711	OR	0.2	61.50	MUDDY
08:48	37	~~14.31~~	7.92	0.712	OR	0.1	61.50	MUDDY
8/17 09:10		17.31	6.19	0.795	864	1.5	45.95	TURB
08:24		15.06	7.02	0.729	1000	1.5	50.45	TURB
08:34		14.17	7.51	0.739	1000	1.5	50.45	TURB
8:44		14.00	7.81	0.735	0.0	1.5	53.77	TURB
8:54		13.93	7.89	0.734	0.0	1.5	55.75	TURB

Development Water Characteristics:

Total volume of Development water removed: ~~55~~ gals

Physical appearance at start		Physical appearance at end	
Color	TWSD	Color	Turb.
Odor	None	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES: CAN NOT FEEL THE BOTTOM VERY WELL, WL Reading IS SLIGHTLY SUSPECT
- Purged dry x 4 times. Poor yield well.
- Purged w/ peristaltic w/ monsoon pumps and then completed w/ PFA bailer & rope

Geologist Signature: E/ Acosta for JC/DC

MH - See Todd Balaspe's development spreadsheet for 5 well vols: other details

2 of 2

WELL DEVELOPMENT LOG

Well ID: MW-FH-96

Date	8/17/2020	Field Personnel	JAMES GOLDTHWAIT	Weather	High 80, cloudy
Site Name	SENECA ARMY DEPOT	Contractor	Parsons	Project No.	749624
Site Location	Firehouse	Evacuation Method	SS monsoon / PFA		

Well information:

Depth to Bottom (Initial) *	62.0 ft.	Date(s) Installed	8-6-20	Date(s) Developed	8/17/2020
Depth to Bottom (Final)*	63.83 ft.	Driller	NYEG	Development Time	Start: 08:24
Depth to Water (Initial)*	27.0 ft.	Well Diameter	4 in.		Stop: -
Depth to Water (Final)*	63.18 ft.	Casing Volume	22.4 gal.		Total: -
* Measuring point	PVC CASING, TOC	Pump setting* (intake)	61, 52, 42		see note below

free bailer

	Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
0900	Start		14.10	7.98	0.735	00	1.75	58.31	TURB
0910	1		13.79	8.80	0.741	00	1.75	61.00	TURB
09:20	2		15.61	9.01	0.736	801	1.75	63.00	TURB
09:28	3	total 15 gallons	14.71	8.12	0.741	00	1.0	62.50	TURB
	4								
8/18 07:55	5	08:00 (TIME)	15.07	5.72	0.813	630	1	57.66	TURB
08:10	6		14.52	6.91	0.758	0.0	1	62.65	TURB
08:18	7	total 3 gal	14.51	7.37	0.753	1000	1. (3)	63.18	TURB
	8								
	9								
	10								

Development Water Characteristics:

Total volume of Development water removed: see page 1

Physical appearance at start
- Color: see page 1
- Odor:
- Sheen/Free Product:

Physical appearance at end
- Color: see page 1
- Odor:
- Sheen/Free Product:

NOTES: see page 1

Geologist Signature: Ed [illegible] for JGL

see page 1

td = total depth
w = depth to water

MW 21.99 w 95
22.30 td

WELL DEVELOPMENT LOG

Well ID: MWFH-10

Date	8/10/2020	Field Personnel	DAN CHAMBERLAND	Weather	Sunny 91°F
Site Name	SENECA	Contractor	Parsons	Project No.	749674.C8
Site Location	5840 2 Five Hawk	Evacuation Method	SS MONSOON / PFA free bailer		

Well Information:

Depth to Bottom (Initial) *	57.75' ft.	Date(s) Installed	8-7-20	Date(s) Developed	8/10/2020
Depth to Bottom (Final)*	57.76 ft.	Driller	MBG	Development Time	Start: 17:00
Depth to Water (Initial)*	54 ft.	Well Diameter	4 in.		Stop: 17:00
Depth to Water (Final)*	54.56 ft.	Casing Volume	33 gal.		Total: -
* Measuring point	PVC CASING / TOC	Pump setting* (intake)	56.75		See note below

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	5	18.10	7.21	0.399	OR	2	54	MUDDY
1	35	21.66	6.68	0.449	OR	0.3	46.43	MUDDY
2	~1	19.47	8.83	0.466	OR	0.1	55	MUDDY
3	>1	15.77	9.59	0.524	OR	0.	55	MUDDY
09:45	1	14.79	9.17	0.615	OR	0.1	54.06	TURBID
5						0.1	55.2	TURB
6								
7	1	17.63	7.44	0.390	9999	0.1	54.96	CLEAR
8								
9								
10								

8/17/2020 1015

8/18/2020 08:00

Development Water Characteristics:

Total volume of development water removed: 2 45.5gals

Physical appearance at start		Physical appearance at end	
Color	TWL	Color	TWL
Odor	None	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES:

42.5 Gallons purged on 8/10/2020

8/11/20 dk 3ft of Water, but bailer only pulling less than 1/2 tube

8/17/20 3ft of Water, but bailer only pulling less than 1/4 tube

8-18-20 SAT on 8-17-20

-Low yielding well

Signature: [signature] for TC/DC

- Purged dry 4 times.
- Purged initially w/ monsoon pump and then completed w/ PFA bailer rope
- See table below for development threshold for 5 well vols + other details

MW11

Monitoring Well Development Form

WELL DEVELOPMENT LOG

Well ID: MWFH-11

Date	9-14-20	Field Personnel	JG	Weather	—
Site Name	SEAD	Contractor	Parsons	Project No.	749674
Site Location	Firehouse	Evacuation Method	Bailer		

Well information:

Depth to Bottom (Initial) *	25 ft.	Date(s) Installed	8-10-20	Date(s) Developed	—
Depth to Bottom (Final)*	25 ft.	Driller	NEG	Development Time	Start: NA
Depth to Water (Initial)*	— ft.	Well Diameter	2 in.		Stop:
Depth to Water (Final)*	— ft.	Casing Volume	— gal.		Total: 0
* Measuring point	TOC	Pump setting* (intake)	—		

NA

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Development Water Characteristics:

Total volume of Development water removed: NA

Physical appearance at start		Physical appearance at end	
Color	Turbid	Color	Turbid
Odor	None	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES: - Well did not produce water for several days and well on 9-14-20 had approx 1.0' of water in it and it was sampled. No purging was conducted due to low yield of well and time it took to produce water.

Geologist Signature: EJ Carlson for JG

SEAD 25 Well Development Logs

WELL DEVELOPMENT LOG

Well ID: 25-20

8

Date	5/21/19	Field Personnel	A. Locatelli, R. Trudeau	Weather	50's cloudy
Site Name	Seneca Army Depot	Contractor	—	Project No.	749674.08000
Site Location	SEA25-20	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	13.88	ft.	Date(s) Installed	5/16/19	Date(s) Developed	5/21/19	
Depth to Bottom (Final)*	13.97	ft.	Driller	Mark Eaves	Development Time	Start:	1130
Depth to Water (Initial)*	5.30	ft.	Well Diameter	2"	in.	Stop:	1530
Depth to Water (Final)*	2.23	ft.	Casing Volume		gal.	Total:	4 hrs

* Measuring point: TOC

Pump setting* (intake):

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—	12.12	7.55	0.820	>1000	—	6.14'	Brown Very Turbid
12:06 1	4	12.65	7.46	0.814	>1000	0.11	6.91	brown; turbid
12:45 2	5	12.49	7.64	0.818	>1000	0.12	7.15	brown; turbid
13:35 3	5	12.67	7.51	0.799	308	0.1	7.72	lgt. brown; cloudy
1425 4	6.5	13.93	7.46	0.801	123	0.13	7.43	Clear
1505 5	6.5	13.25	7.59	0.793	133	0.16	7.44	Clear
1525 6	3	12.52	7.41	0.819	133	0.16	7.33	Clear
7								
8								
9								
10								

Pumped
Pumped
Pumped
"

Development Water Characteristics:

Total volume of Development water removed: 30 gallons

Physical appearance at start		Physical appearance at end	
Color	Brown	Color	clear
Odor	None	Odor	none
Sheen/Free Product	None	Sheen/Free Product	None

NOTES: Purged for 4hrs total

Geologist Signature: Alex Eaves

WELL DEVELOPMENT LOG

Well ID: 25-21

Date	5/20/19	Field Personnel	A Cook + R. Inclima	Weather	56's sunny
Site Name	Seneca Army Depot	Contractor	—	Project No.	749674.08000
Site Location	25-21	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	8.37'/8.68' ft.	Date(s) Installed	5/7/19	Date(s) Developed	5/20/19 + 5/21/19
Depth to Bottom (Final)*	7.61' ft.	Driller	Mark Ewer	Development Time	Start: 0945
Depth to Water (Initial)*	2.07'/2.44' ft.	Well Diameter	2" in.		Stop: 1040
Depth to Water (Final)*	7.76' ft.	Casing Volume	gal.		Total: 55min
* Measuring point		Pump setting* (intake)			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0	16.05	7.77	0.645	475	-	2.30	Brown, murky
1	2	16.47	7.63	0.716	>1000	0.04	7.49	brown, dark
10:35 2	0.5	18.98	7.51	0.330	>1000	0.025	7.60	dark brown; cloudy
10:30 3	0.5	20.81	7.95	0.712	>1000	0.016	8.52	brown; cloudy
12:05 4	0.2	20.37	7.93	0.721	603	0.006	8.52	cloudy brown
12:40 5	0.1	22.25	7.92	0.727	942	0.003	8.53	cloudy brown
DTB 8.78 13:19 6	0.6	22.31	7.77	0.387	>1000	0.015	8.51	cloudy brown
5 shut down 5/21/19 09:30 7	-	12.65	7.76	0.771	522	-	3.10	clear/sl silty cloudy
09:50 8	2	12.42	7.47	0.782	>1000	0.1	8.12	dark brown
10:15 9	2	11.74	7.56	0.789	>1000	0.04	7.83	Brown, murky
Shut down 10:40 10	0.5	13.36	7.81	0.775	655	0.02	~~8.28~~ 7.61	brown, cloudy
! DTB 7.76'								

Development Water Characteristics:

Total volume of Development water removed: 5 gallons → 9.5 gallons

Physical appearance at start		Physical appearance at end	
Color	Cloudy	Color	Clear-cloudy
Odor	Mild	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES: Turbidity never lowered.

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: 25-21

Date	5/28/19	Field Personnel	A. Cook	Weather	50's Rainy
Site Name	SEDA	Contractor	–	Project No.	749697.08000
Site Location	SEAD 25	Evacuation Method	Peri Pump		

Well information:

Depth to Bottom (Initial) *	8.70' -8.68' ft.	Date(s) Installed	5/1/19	Date(s) Developed	5/28/19 +5/29/19
Depth to Bottom (Final)*	8.81' -8.71' ft.	Driller	Mark Eaves	Development Time	Start: 1225 13:20
Depth to Water (Initial)*	2.00 2.16 ft.	Well Diameter	2 in.		Stop: 1415 13:55
Depth to Water (Final)*	8.37' ft.	Casing Volume	gal.		Total: 1hr 50min
* Measuring point	TOC	Pump setting* (intake)			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
1225 Start	–	13.61	7.36	0.667	480	–	3.65'	cloudy
1245 1	3.5	13.46 FR	7.37	0.670	68.5	0.175	6.5'	clearing
1315 2	5	15.26	7.34	0.654	25.1	0.175	8.31	clear
1335 3	6.25	14.52	7.28	0.663	0.0	0.0625	8.35'	clear
1355 4	7.25	13.90	7.28	0.666	0.0	0.05	8.36'	clear
1411 5	~~8.00~~	~~15001~~					~~8.37'~~	
5/29 13:25 6	–	12.95	7.50	0.740	>1000	–	4.90	dark brown, very turbid
13:35 7	1.0	12.88	7.43	0.768	>1000	0.1	6.52	dark brown, very turbid
13:50 8	–	12.85	7.54	0.706	>1000	–	8.11	" "
~~9~~								
0910 10	–	14.82	7.85	0.748	>1000	–	4.07	brown, turbid
0920	0.3	13.67	7.51	0.773	629	0.03	5.11	cloudy
0925	0.15	13.40	7.43	0.780	>1000	0.03	6.04	cloudy
0930	0.15	13.28	7.54	0.776	>1000	0.03	7.81	brown, turbid
0935	0.15	12.83	7.49	0.783	>1000	0.03	8.69'	brown, turbid

Stopped peri pump to hand surge

Started peri pump again

5/30

Development Water Characteristics:

Total volume of Development water removed: 7.5 gallons

Physical appearance at start		Physical appearance at end	
Color	none Cloudy Grey	Color	none
Odor	none	Odor	none
Sheen/Free Product	Slight sheen	Sheen/Free Product	Slight sheen

NOTES: Tried previously on 5/20 + 5/21

5/29/19: 1355: well went dry; ~1.4 gal.

Start 09:10

Stop 09:38

5/30/19: DTW: 2.17', DTB: 8.70'

DTW: N/A, DTB: 8.69' Well went dry @ 0935 - Final casing

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: 25-22

Date	5/20/19	Field Personnel	A. Cook + R. Indim	Weather	60-70s partly sunny
Site Name	Seneca Army Depot	Contractor	—	Project No.	
Site Location	25-22	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	14.02/14.20 ft.	Date(s) Installed	5/13/19	Date(s) Developed	5/20/19 + 5/21/19
Depth to Bottom (Final)*	13.96/14.12 ft.	Driller	Mark Eaves	Development Time	Start: 14:00 0911
Depth to Water (Initial)*	0.0/0.0 ft.	Well Diameter	2" in.		Stop: 14:45 5/21
Depth to Water (Final)*	1.33/1.22 ft. (1 fittings)	Casing Volume	gal.		Total: 7hrs
* Measuring point	Top of Casing	Pump setting* (intake)			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	-	14.90	7.71	0.704	485		1.2	slightly cloudy
14:32 1	5	15.09	7.48	0.707	135	0.156	0.96	slightly cloudy
15:00 2	5	13.71	7.60	0.732	77.3	0.178	1.33	clearish
15:26 3	4.9	13.25	7.46	0.732	45.5	0.188	1.37	clearish
15:46 4	4.7	12.91	7.26	0.735	26.2	0.235	1.48	clear
1605 5	4.8	13.12	7.49	0.746	17.9	0.252	1.33	clear
6		7 (RT)						
5/21 0815 7	-	12.16	7.90	0.754	4138	-	3.36 1.00	Clearish (slightly cloudy)
dumped 5 gal. 09:40 8	5	12.40	7.50	0.737	48.7	0.2	2.96	clearish
1010 9	6	10.85	7.41	0.768	28.9	0.2	3.00	Clear
10:35 10	6	10.70	7.44	0.775	24.3	0.24	3.01	clear
11:40	13	10.56	7.48	0.778	17.8	0.2	3.11	clear
12:30	10	11.73	7.40	0.774	11.7	0.2	3.11	clear
13:06	7.2	11.95	7.51	0.770	10.2	0.2	3.06	clear
13:48	8.4	11.67	7.31	0.780	3.5	0.2	3.01	clear
1435	8	12.34	7.30	0.779	4.7	0.2	4.73.07	Clear

Development Water Characteristics:

Total volume of Development water removed: 75.63

Physical appearance at start		Physical appearance at end	
Color	Cloudy	Color	clear
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES:

Geologist Signature: [signature]

Sheet 1 of 2 MW25-

7-22-20
7-21-20

WELL DEVELOPMENT LOG

Well ID: 22D

Date	7-20-20	Field Personnel	DRD	Weather	Sunny 80s
Site Name	SEAD	Contractor	Parsons	Project No.	749674
Site Location	SEAD 25	Evacuation Method	Monsoon - HDPE		

Well information:

Depth to Bottom (Initial) *	50.20 ft.	Date(s) Installed	7-1-20	Date(s) Developed	7-21-20 7-20-20
Depth to Bottom (Final)*	50.20 ft.	Driller	Parsons	Development Time	Start: See below
Depth to Water (Initial)*	3.36 ft.	Well Diameter	2 in.		Stop:
Depth to Water (Final)*	Dry ft.	Casing Volume	- gal.		Total:
* Measuring point	TOC	Pump setting* (intake)	49		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
7/20/20								
49 Start								
49 1115	3						18.75	Grey
1130	4						22.58	Lt Grey
1145	5	18.83	6.04	0.480	544		24.25	Grey
1200	6						26.05	
1215	8						33.70	
1230	9.5						36.25	
1245	10.5	Pump ran dry - Allowing to Recharge					39.10	Grey
8								
1430							16.20	
7/21/20 10								
0800							3.56	Lt Grey
0815	12.5						13.30	
0830	14.5	17.10	5.61	0.482	440		21.20	Lt Grey
0845	16.5						33.00	Lt Grey
0850	18.0	Pump ran dry					39.10	Lt Grey
7/22/20								
49 0845							3.68	
0900	21.5	16.82	7.73	0.469	277		26.50	

Development Water Characteristics:

Total volume of Development water removed: 10.5 7-20-20, 7.5 7-21-20, 18.0

Physical appearance at start		Physical appearance at end	
Color	Gray	Color	Lt Gray
Odor	None	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES: Screen 39-49'

Target 80 gals

- See Todd Baumgartner Development Spread Sheet for 5 well vols used of the details

Geologist Signature: E/ Compton for DRD

Sheet 2 of 2 MW 25-

WELL DEVELOPMENT LOG

Well ID: 22D

Date	7-22-20	Field Personnel	DRD	Weather	Cloudy
Site Name	SEAD	Contractor	Parsons	Project No.	744674
Site Location	SEAD 25	Evacuation Method	Monsoon - HDPE		

Well information:

Depth to Bottom (Initial) *	50.20 ft.	Date(s) Installed	7-1-20	Date(s) Developed	7/20-22/20
Depth to Bottom (Final)*	50.20 ft.	Driller	MGG	Development Time	Start: see below
Depth to Water (Initial)*	3.36 ft.	Well Diameter	2 in.		Stop:
Depth to Water (Final)*	Dry ft.	Casing Volume	- gal.		Total: 0
* Measuring point	TOC	Pump setting* (intake)	49		

7/22/20 Pump Depth 49

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
~~Start~~ 1.5	24.5	17.06	8.00	0.492	371		35.25	Lt Grey
0930	27.00						42.00	
0935	28.00	Pump ran dry					46.00	
3								
4								
5								
6								
7								
8								
9								
10								

~~10 gals~~

Development Water Characteristics:

Total volume of Development water removed: 28 gals total 7/20, 7/21, 7/22

total

Physical appearance at start		Physical appearance at end	
Color	Grey	Color	Grey
Odor	None	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES: See page 1

Geologist Signature: [signature] for DRD

WELL DEVELOPMENT LOG

Well ID: SEAD 25-23

Date	5/17/19	Field Personnel	RP / MC	Weather	Cloudy; 60°
Site Name	Seneca Army Depot	Contractor	Parratt-Wolff	Project No.	749674.08000
Site Location		Evacuation Method	Vetera		

Well information:

Depth to Bottom (Initial) *	13.62 | 13.48 ft.	Date(s) Installed	5/8/19	Date(s) Developed	5/17/19
Depth to Bottom (Final)*	13.90 ft.	Driller	Parratt-Wolff	Development Time	Start: 15:40 -0450
Depth to Water (Initial)*	1.83, 2.91 ft.	Well Diameter	2 in.		Stop: 16:02 -15
Depth to Water (Final)*	9.91 ft.	Casing Volume	1.04 gal.		Total: 60 hrs 20 min
* Measuring point	TOC	Pump setting* (intake)			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start		13.62	7.50	0.815	418		4.07	cloudy
1	2.4	13.48	7.44	0.831	122	0.12	4.36	cloudy
2		13.87	7.49	0.793	140		5.24	cloudy
0940 3 45min	5	13.76	7.34	0.865	>1000	0.125	10.57	cloudy
10:48 4	4	15.28	7.40	0.846	457	0.07	10.54	cloudy
11:18 5 30min	2.5	16.76	7.28	0.852	148	0.08	~~7.60~~ 10.77	slightly cloudy
11:44 6	1	17.58	7.45	0.846	148	0.04	10.36	slightly cloudy
12:22 7	1	18.44	7.42	0.834	>1000	0.03	8.86	cloudy brown
13:00 8	2.5	19.45	7.42	0.823	>1000	0.07	11.71	cloudy brown
1410 9	3	16.62	7.28	0.862	191	0.06	9.94	clearing-cloudy
1440 10 30	2 (23.6g)	15.47	7.35	0.877	53.7	0.06	9.945	" "
1512 30	2	14.60	7.32	0.869	27.0	0.06	10.06	clear
1540 30	2	14.43	7.30	0.891	22.1	0.06	9.90	clear
1555 15	1	14.25	7.18	0.904	19.6	0.06	9.91	clear

5/20/19

Development Water Characteristics:

Total volume of Development water removed: 28.6g

Physical appearance at start		Physical appearance at end	
Color	cloudy	Color	Clear
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES: 1600 on 5/17/19: Stopped development for day. Will continue next week
Started on 5/17/19 for ~ 20 minute then continued 5/20/19

Geologist Signature: Alison Lee

WELL DEVELOPMENT LOG

Well ID: 25-24

Date	5/28/19	Field Personnel	A. Cook, R. Inclima	Weather	50's Rainy
Site Name	SEDA	Contractor	-	Project No.	749674.0800
Site Location	SEAD 25	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	9.75 ft.	Date(s) Installed	5/17/19	Date(s) Developed	5/28/19		
Depth to Bottom (Final)*	9.65 ft.	Driller	Mark Ewes	Development Time	Start: 0925		
Depth to Water (Initial)*	4.00 ft.	Well Diameter	2 in.		Stop: 16:45		
Depth to Water (Final)*	5.21 ft.	Casing Volume	gal.		Total: 7hr 20mn		
* Measuring point	TOC	Pump setting* (intake)					

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
0925 Start	—	13.14	7.81	1.18	>1000	—	1.00	Brown turbid
0945 1	2.8	12.72	7.15	0.896	>1000	0.14	4.35	brown turbid
10:15 2	2.2	13.14	7.11	0.828	>1000	0.073	4.28	cloudy
10:45 3	2.2	13.19	7.06	0.809	784	0.073	4.02	cloudy
1115 4	2.19	13.75	7.48	0.795	646	0.073	4.18	cloudy
11:45 5	3	14.96	7.06	0.800	>1000	0.1	4.18	cloudy
12:20 6	3.5	14.00	7.16	0.763	>1000	0.1	4.05	cloudy
12:50 7	3	15.44	7.21	0.752	>1000	0.1	4.20	cloudy/brown
13:20 8	3	16.66	7.26	0.733	>1000	0.1	4.00	cloudy/brown
13:50 9	3.9	15.53	7.16	0.733	>1000	0.13	4.24	cloudy/brown
14:25 10	4.7	14.53	7.14	0.737	>1000	0.18	6.42	cloudy/brown
15:00	4.7	15.59	7.17	0.729	>1000	0.135	5.83	cloudy/brown
15:35	4.7	16.30	7.11	0.717	>1000	0.135	5.83	cloudy
16:05	4.1	15.77	7.13	0.699	>1000	0.135	5.21	cloudy
16:40	4.7	15.78	7.09	0.703	817	0.135	5.21	cloudy

increased pump setting @ 14:06

decreased pump setting due to water level drop

Development Water Characteristics:

Total volume of Development water removed: ~48.69 gal.

Physical appearance at start		Physical appearance at end	
Color	Brown	Color	cloudy gray
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: 25-25

Date	5/28/19	Field Personnel	A. Coan + B. Inchiosa	Weather	50's Rain
Site Name	SEDA	Contractor	—	Project No.	749674.03000
Site Location	SEDD 25	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	~~4.75~~ 9.69 ft.	Date(s) Installed	5/16/19	Date(s) Developed	5/20/19
Depth to Bottom (Final)*	9.63 ft.	Driller	Mark Ewes	Development Time	Start: 0935
Depth to Water (Initial)*	~~0.00~~ 0.0 ft.	Well Diameter	2 in.		Stop: 17:05
Depth to Water (Final)*	0.96 ft.	Casing Volume	gal.		Total: 8hr 26min

* Measuring point: TOC Pump setting* (intake): TOC

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—	11.97	7.86	0.530	318	—	0.0	Grey, murky
10:00 1	4	12.18	7.14	0.482	228	0.16	0.89	cloudy
10:30 2	6	12.42	7.12	0.483	73.1	0.02	0.89	clear
11:20 3	~~6~~ 8	13.32	7.09	0.464	43.6	0.07	0.91	Clear
12:05 4	8.5	13.78	7.22	0.465	111	0.17	0.92	clearish
12:35 5	5.1	13.89	7.16	0.467	98.2	0.17	1.04	clearish
13:00 6	4.3	14.45	7.14	0.462	82.2	0.17	1.10	clearish
13:35 7	5.9	14.99	7.12	0.457	54.3	0.17	1.18	clear
14:10 8	5.9	14.51	7.16	0.453	26.1	0.17	1.16	clear
14:50 9	6.8	14.92	7.19	0.454	22.6	0.17	1.18	clear
15:25 10	5.9	16.83	7.16	0.454	148	0.17	0.86	clearish
16:00	5.9	16.18	7.34	0.455	97.7	0.17	0.88	clear
16:30	5.1	15.71	7.26	0.456	228	0.17	0.89	cloudy
17:00	5.1	15.20	7.22	0.456	35.4	0.17	0.96	clear

Development Water Characteristics:

Total volume of Development water removed: ~76.5 gal

Physical appearance at start		Physical appearance at end	
Color	Grey/murky	Color	clear
Odor	None	Odor	none
Sheen/Free Product	None	Sheen/Free Product	None

NOTES:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: MW25-26

Date	9/17/19	Field Personnel	AFM	Weather	55°, sunny
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	13.45 ft.	Date(s) Installed	9/11/19	Date(s) Developed	9/17/19
Depth to Bottom (Final)*	13.45 ft.	Driller	Parratt Wolff	Development Time	Start: 0910
Depth to Water (Initial)*	1.21 ft.	Well Diameter	2 in.		Stop: 1200
Depth to Water (Final)*	1.21 ft.	Casing Volume	2.00 gal.		Total: 170 min
* Measuring point	top of casing	Pump setting* (intake)	throughout screen		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—				>1000	manual	1.21	gray brown
1	2.00				>1000		1.21	
2	4.00				>1000		1.21	
3	6.00				>1000		1.21	
4	8.00				>1000		1.21	
5	10.00	15.38	9.48	2.96	>1000	0.10	1.21	
6	12.0	13.57	7.87	0.602	>1000	0.31	1.21	
7	14.0	13.46	9.55	0.674	>1000	0.31	1.21	
8	16.0	13.44	9.39	0.676	>1000	0.31	1.21	
9	18.0	13.42	9.21	0.670	>1000	0.31	1.21	
10	20.0	13.47	9.09	0.683	881	0.31	1.21	clear
11	22.0	13.49	7.81	0.681	525	0.31	1.21	
12	24.0	13.67	9.86	0.678	327	0.31	1.21	
13	26.0	13.58	8.05	0.678	257	0.31	1.21	
14	28.0	13.60	8.21	0.678	201	0.31	1.21	
15	30.0	13.66	8.62	0.680	136	0.31	1.21	

end manual / start waterra

Development Water Characteristics:

Total volume of Development water removed: 30.0

Physical appearance at start		Physical appearance at end	
Color	gray brown	Color	clear / gray
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES:

well volume: 2.00 gal; 5 wv = 10.0 gal; 10 wv = 20 gal
0910 - 0930 manual (8.0 gal)
0935 start waterra * method below
1200 development complete

Geologist Signature:

* via Todd B. ① surge manual whole screen ② Pump 1 wet w/waterra ③ Surge manually ④ Repeat cycle for every 1 wv

WELL DEVELOPMENT LOG

Well ID: MW25-27

Date	9/16/19	Field Personnel	AFM	Weather	70°, sunny
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	14.70	ft.	Date(s) Installed	9/11/19	Date(s) Developed	9/16/19
Depth to Bottom (Final)*	14.72	ft.	Driller	Parratt Wolff	Development Time	Start: 1410
Depth to Water (Initial)*	1.85	ft.	Well Diameter	2 in.		Stop: 1540
Depth to Water (Final)*	14.72	ft.	Casing Volume	2.10 gal.		Total: 90 min

* Measuring point: top of casing Pump setting* (intake): throughout screen

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—				>1000	manual	1.85	gray brown
1	2.10				>1000	↓	3.80	↓
2	4.20				>1000	↓	5.25	↓
3	6.3				>1000	0.04	7.40	↓
4	8.4				>1000	0.21	9.75	gray
5	10.5				>1000	0.21	11.50	↓
6	STOP DEVELOPMENT 9/16/19							
7	9/17/19 @ 1230							
8	2.10				>1000	manual	5.28	gray brown
9	4.2				>1000	surge	6.60	↓
10	6.3				>1000	↓	9.21	↓
11	8.4	14.33	7.31	11.2	>1000	0.14	12.5	↓
12	10.5	14.39	7.36	10.0	>1000	↓	13.8	↓
13	12.6	14.28	7.26	9.2	>1000	↓	14.70	↓
	STOP DEVELOPMENT 9/17/19				well is dry @ 1415			
9/17/19	0845 DTW = 3.50 ft.	1230		DTW = 2.45				

start waterra

manual start

surge/waterra method

Development Water Characteristics:

Total volume of Development water removed: 10.7 gal (23.1 total by 9/17/19)

Physical appearance at start

Color: gray brown
Odor: none
Sheen/Free Product: none

Physical appearance at end

Color: gray
Odor: none
Sheen/Free Product: none

NOTES:

9/16

Water column:
well volume: 2.10 gal ; 5 WV = 10.5 gal ; 10 WV = 21.0 gal
1410-1440 manual (4.2 gal)
1445 start waterra → 1515 end waterra via Todd, start manual @ 1520 (surge)
1540 well is dry

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: MW25-27

Date	9/18/19	Field Personnel	AFM	Weather	MW25-27
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	70s, sunny
Site Location	Romulus, NY	Evacuation Method	Waterra		749674.08000

Well Information:

Depth to Bottom (Initial) *	14.72	ft.	Date(s) Installed			Date(s) Developed	9/18/19
Depth to Bottom (Final)*	14.72	ft.	Driller	Parratt Wolff		Development Time	Start: 1030
Depth to Water (Initial)*	3.85	ft.	Well Diameter	2	in.		Stop: 1130
Depth to Water (Final)*	14.72	ft.	Casing Volume	2.10	gal.		Total: 60 min
* Measuring point	top of casing		Pump setting* (intake)	screen			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—							
1	2.1				506	0.32	5.00	brown
2	4.2				132		11.70	↓
3	6.3				141		13.92	clear
4	8.2				41.3	↓	14.72	↓
5	WELL IS DRY, STOP DEVELOPMENT							
6								
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: 8.2 gal

Physical appearance at start		Physical appearance at end	
Color	brown	Color	clear
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES: WL = 3.90 @ 0915 9/18/19
1130 development complete (well is dry)

* 3rd time pumped dry

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: MW25-28

Date	9/12/19	Field Personnel	RD	Weather	63°; cloudy
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	13.71	ft.	Date(s) Installed	9/10/19	Date(s) Developed	9/12/19
Depth to Bottom (Final)*	13.76	ft.	Driller	Parratt Wolff	Development Time	Start: 1305
Depth to Water (Initial)*	0.70	ft.	Well Diameter	2 in.		Stop: 1455
Depth to Water (Final)*	3.38	ft.	Casing Volume	0.163 gal.		Total: 110 minutes
* Measuring point	top of casing		Pump setting* (intake)	0.32 gal/min		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—				>1000	0.32	2.07	brown
1	2.5				>1000	0.32	2.69	brown
2	4.6				>1000	0.32	2.85	lgt brown
3	6.7				>1000	0.32	3.0	gray brown
4	8.8				>1000	0.32	3.0	lgt. brown
5	10.94				>1000	0.32	3.31	lgt. brown
6	13.06				>1000	0.32	3.27	lgt. brown
7	15.18				>1000	0.32	3.26	gray brown
8	17.3				>1000	0.32	3.35	gray/brown
9	19.412				>1000	0.32	3.35	gray
10	21.54				>1000	0.32	3.37	gray
	28.46				>1000	0.32	3.38	Gray

Development Water Characteristics:

Total volume of Development water removed: ~28.46 gal.

Physical appearance at start

Color: brown
Odor: None
Sheen/Free Product: None

Physical appearance at end

Color: gray
Odor: None
Sheen/Free Product: None

NOTES:

Water column: 13.01'
well volume: 2.12 gal; 5 wv = 10.6 gal; 10 wv = 21.2 gal
1305 - 1315: Manual surge; 2.5 gallons
1320 - started waterra
Around 24 gallons; began to hand surge @ 1430; finished up waterra @ 1440

Geologist Signature:

$\frac{200mL}{10s} = \frac{x}{60s}$ $10x = 12000$ $x = 1200 = 0.32$ gal.

WELL DEVELOPMENT LOG

Well ID: 25-28

Date	9/18/19	Field Personnel	KD	Weather	70°; Sunny
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	13.35	ft.	Date(s) Installed	9/10/19		Date(s) Developed	9/12 & 9/18/19
Depth to Bottom (Final)*	13.38	ft.	Driller	Parratt Wolff		Development Time	Start: 1215
Depth to Water (Initial)*	0.5	ft.	Well Diameter	2	in.		Stop: 1405
Depth to Water (Final)*	0.5	ft.	Casing Volume	0.163	gal.		Total: 105 min.
* Measuring point	top of casing		Pump setting* (intake)	0.317 gal/min			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	1	19.18	7.60	0.888	>1000	0.317	2.92	brown
1	5.44	18.63	7.54	0.889	>1000	0.317	3.00	brown
2	8.3	18.45	7.55	0.891	>1000	0.317	2.35	lgt. brown
3	14.3	18.05	7.31	0.911	978	0.317	3.00	cloudy br.
4	16.2	18.09	7.12	0.912	>1000	0.317	2.95	cloudy br.
5	18.4	17.91	6.34	0.922	982	0.317	2.72	cloudy br.
Manual Purge @ 1320 — 6	20.0	18.00	6.77	0.921	>1000	0.317	2.75	cloudy br.
7	22.6	18.22	6.69	0.930	>1000	0.317	3.04	brown
8	25.75	18.02	6.64	0.922	606	0.317	2.92	cloudy
9	27.4	18.16	6.58	0.926	468	0.317	2.95	cloudy
10	28.9	18.17	6.55	0.928	401	0.317	2.90	cloudy
	32.1	17.89	6.50	0.932	326	0.317	2.97	cloudy
	35.3	17.68	7.35	0.930	321	0.317	2.96	clearish

Development Water Characteristics:

Total volume of Development water removed: ~35.3 gal.

Physical appearance at start		Physical appearance at end	
Color	brown	Color	clearish
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES:

WC = water column

WV = well volume

WC = 12.85'; 1 WV = 2.09 gal; 5 WV = 10.47 gal; 10 WV = 20.95 gal

1215 – Manual purge ~1 gallon; 1220 – started waterra; 1320 – Manual purge ~1 gallon; 1326 – started waterra

Geologist Signature:

$\frac{200\,mL}{10s} = \frac{x}{60s}$ $10x = 12000$ $x = 1200\,mL = 0.317\,gal/min$

WELL DEVELOPMENT LOG

Well ID: MW25-29

Date	9/13/19	Field Personnel	RD	Weather	63°; Sunny
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	17.00	ft.	Date(s) Installed	9/11/19	Date(s) Developed	9/13/19
Depth to Bottom (Final)*	17.15	ft.	Driller	Parratt Wolff	Development Time	Start: 1135
Depth to Water (Initial)*	3.00	ft.	Well Diameter	2 in.		Stop: 1320
Depth to Water (Final)*	17.15	ft.	Casing Volume	0.163 gal.		Total: 110 min
* Measuring point	top of casing		Pump setting* (intake)	0.634 gal/min		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—				>1000	0.63	3.00	gray
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: _____

Physical appearance at start

Color: gray
Odor: none
Sheen/Free Product: none

Physical appearance at end

Color: dry
Odor: N/A
Sheen/Free Product: N/A

NOTES: water column: 14'
well volume: 2.28 gal; 11.41 gal = 5 well volumes; 22.82 = 10 well volumes
left waterra running @ 0.634 gal/min to go oversee drilling
1320 - returned to well; went dry; shut down waterra

Geologist Signature: [signature]

$\frac{200ml}{5s} = \frac{x}{60s}$ $5x = 12000$ $x = 2400\ ml = 0.634$ gal/min

60

WELL DEVELOPMENT LOG

Well ID: MW25-29

Date	9/17/19	Field Personnel	RE	Weather	64°; Sunny
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	waterra		

Well information:

Depth to Bottom (Initial) *	17.16	ft.	Date(s) Installed	9/11/19	Date(s) Developed	9/13, 9/17/19
Depth to Bottom (Final)*	17.20	ft.	Driller	Parratt Wolff	Development Time	Start: 1050
Depth to Water (Initial)*	3.47	ft.	Well Diameter	2 in.		Stop: 1200
Depth to Water (Final)*	17.20	ft.	Casing Volume	0.163 gal.		Total: 70 min
* Measuring point	top of casing		Pump setting* (intake)	0.074 gal/min.		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	1.37	18.01	7.25	0.615	>1000	0.074	10.20	cloudy
1	1.74	18.00	7.25	0.612	>1000	0.074	12.00	cloudy
2	2.11	18.58	7.13	0.606	>1000	0.074	12.21	cloudy
3	2.48	19.18	7.17	0.605	>1000	0.074	12.50	cloudy
4	4.7	16.61	7.59	0.590	>1000	0.074	14.64	cloudy
5								
6								
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: ~5 gal

Physical appearance at start

Color: cloudy
Odor: none
Sheen/Free Product: none

Physical appearance at end

Color: cloudy/dry
Odor: none
Sheen/Free Product: none

NOTES: WC: 13.69'; 1050 - Manual purged ~1 gal; 1055 - started waterra
well volume: 2.23 gal; 5 WV: 11.16 gal; 10 WV: 22.31 gal
1115 - Manual purge; 1120 - started waterra
1200 - well went dry

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: MW25-29

Date	9/18/19	Field Personnel	AFM	Weather	70°, sunny
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well Information:

Depth to Bottom (Initial) *	17.15 ft.	Date(s) Installed		Date(s) Developed	9/18/19
Depth to Bottom (Final)*	17.15 ft.	Driller	Parratt Wolff	Development Time	Start: 0950
Depth to Water (Initial)*	3.51 ft.	Well Diameter	2 in.		Stop: 1015
Depth to Water (Final)*	17.15 ft.	Casing Volume	2.23 gal.		Total: 25 min

* Measuring point _____ Pump setting* (intake) _____

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—					manual surge		
1	2.23				>1000	↓	8.50	brown
2	4.4				>1000	↓	17.02	brown
3	6.6	WELL IS DRY, STOP DEVELOPMENT						
4								
5								
6								
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: 4.5 gal

Physical appearance at start		Physical appearance at end	
Color	brown	Color	brown
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES: 1015 development complete

* 3rd time pumped dry

Geologist Signature: _____

WELL DEVELOPMENT LOG

Well ID: MW25-30

Date	9/17/19	Field Personnel	KI	Weather	65°; Sunny
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	16.64 ft.	Date(s) Installed	9/13/19	Date(s) Developed	9/17/19
Depth to Bottom (Final)*	16.70 ft.	Driller	Parratt Wolff -	Development Time	Start: 0840
Depth to Water (Initial)*	9.63 ft.	Well Diameter	2 in.		Stop: 0945
Depth to Water (Final)*	9.27 ft.	Casing Volume	0.163 gal.		Total: 65 min.
* Measuring point	GL	Pump setting* (intake)	0.317 gal/min		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	3.17	14.64	6.38	0.950	>1000	0.317	7.35	cloudy
~~1~~	9.83	14.21	6.56	0.962	>1080	0.317	8.15	cloudy
~~2~~	13	14.10	6.65	0.986	938	0.317	8.55	cloudy
~~3~~	16.41	14.40	6.75	0.955	>1000	0.317	8.82	cloudy-brown
~~4~~	17.99	14.13	6.82	1.03	>1000	0.317	8.73	cloudy
~~5~~	19.56	14.20	6.82	1.00	>1000	0.317	9.27	cloudy
6								
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: ~ 19.56 gals

Physical appearance at start
- Color: dark brown
- Odor: None
- Sheen/Free Product: None

Physical appearance at end
- Color: cloudy
- Odor: None
- Sheen/Free Product: None

NOTES: well volume = 1.14; 5 well volumes = 5.7; 10 well volumes = 11.42; 20 well volumes = 22.8
Hand purged 0840 to 0850
0921 - Hand purge; 0926 - turned waterra on; pumped ~1.2 gal.

Geologist Signature:

$\frac{200mL}{10s} = \frac{x}{60s}$ $10x = 12000$

$x = 1200mL = 0.317$ gal/min

WELL DEVELOPMENT LOG

Well ID: MW25-31S

Date	7/15/20	Field Personnel	ETM/AC	Weather	83°; sunny
Site Name	SAD 25	Contractor	Parsons	Project No.	749674
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well Information:

Depth to Bottom (Initial) *	18.15 ft.	Date(s) Installed	6-30-20	Date(s) Developed	7/15/20 / 7/16 / 7/17
Depth to Bottom (Final)*	18.20 ft.	Driller	NYEG	Development Time	Start: 1401
Depth to Water (Initial)*	18.23 ft.	Well Diameter	2 in.		Stop: 1446
Depth to Water (Final)*	18.001 ft.	Casing Volume	1.460 gal.		Total: 0.75
* Measuring point	TOC	Pump setting* (intake)	14.0 / 16.0 / 17.0, 17.65		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—	25.53	7.49	0.954	714	—	9.25	Clear
1	2	26.34	7.37	0.948	256	0.133	13.6	cloudy
2	2.75	23.11	7.27	0.900	453	0.05	15.7	cloudy
3	3.5	24.20	7.20	0.902	614	0.05	18.0	cloudy
4	Well ran dry	—					10.95	cloudy
5	—	21.53	7.16	0.859	>1000	—	10.25	cloudy
6	1	22.95	7.63	0.373	~~666~~ 398	0.05	12.95	cloudy
7	1.5	17.61	6.77	0.900	201	0.03	18.11	cloudy
8	2	19.41	7.16	0.888	>1000	0.03	10.01	cloudy/brown
9	3.5 Well Dry							
10	—	17.29	7.15	0.838	373	—	12.25	cloudy
	2	20.19	7.17	0.842	248		14.01	cloudy
	3	19.20	7.12	0.840	575		17.25	cloudy
	Dry for third time after 10 gallons total							

7/17

Development Water Characteristics:

Total volume of Development water removed: 3.510

Physical appearance at start

Color: Clear
Odor: None
Sheen/Free Product: None

Physical appearance at end

Color: Cloudy grey
Odor: None
Sheen/Free Product: None

NOTES: 7/15 7.20 gal is 5 well volumes
Purged Dry three times w/ total of 10 gallons ~7 well volumes
DTB final: 18.60 DTW final: 18.00
- See Todd Reference Development spread sheet for 5 well vols and extra details

Geologist Signature: Faith McDonald | Tetra Tech

MW 25

WELL DEVELOPMENT LOG

Well ID: 31D

Date	7-20-20 / 7/21/20	Field Personnel	DCD	Weather	Sunny 80s
Site Name	SEAD	Contractor	Parsons	Project No.	749674
Site Location	SEAD 25	Evacuation Method	Monsoon - HDPE		

Well information:

Depth to Bottom (Initial) *	83.00 ft.	Date(s) Installed	7-2-20	Date(s) Developed	7-20-20
Depth to Bottom (Final)*	83.0 ft.	Driller	MEG	Development Time	Start: See Below
Depth to Water (Initial)*	10.12 ft.	Well Diameter	2 in.		Stop:
Depth to Water (Final)*	66.56 ft.	Casing Volume	— gal.		Total: 0
* Measuring point	TOC	Pump setting* (intake)	82		

Time / Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
7/20/20 Pump Reset 82								
82 1515								
82 1530	3.5						24.45	Gray
82 1545	6						30.95	Gray
82 1600	7.5						31.7	Brn/
82 1615	9.5						37.0	Grey
5								
7/21/20 82 0910							10.15	
0915	5 min 11.5						19.50	Grey
0930	14.0	17.33	6.01	0.490	>1000	~~>1000~~	27.35	Grey
0945	15.5						29.75	
1000	17.0						32.50	
1015	18.5						34.25	Grey
1030	20.0						35.50	
1045	22.0	19.74	6.39	0.459	679		36.50	
1100	27.0						52.25	
1115	30.5	20.61	7.22	0.461	>1000		58.80	Grey
1130	31.5						56.20	
1145	33.0						57.00	Grey
1200	35.00						60.15	

Development Water Characteristics:

Total volume of Development water removed: 45

Physical appearance at start		Physical appearance at end	
Color	D/K Grey	Color	Gray
Odor	None	Odor	none
Sheen/Free Product	None	Sheen/Free Product	none

NOTES:

Screen 41-81'

Target Purge 4000 gals

Used Todd Ridenour's development spreadsheet for small wells

Geologist Signature: [signature] / PRS

Pg 1 of 2

MW 25

WELL DEVELOPMENT LOG

Well ID: 31 D

Date	7/21/20	Field Personnel	DFD	Weather	Sunny 80s
Site Name	SEAD	Contractor	Parsons	Project No.	749674
Site Location	SEAD 25	Evacuation Method	Monsoon - HDPE		

Well information:

Depth to Bottom (Initial) *	83.00	ft.	Date(s) Installed	7-2-20	Date(s) Developed	7/20	7/21
Depth to Bottom (Final)*	83.00	ft.	Driller	N Y E G	Development Time	Start:	See below
Depth to Water (Initial)*	10.12	ft.	Well Diameter	2	in.	Stop:	
Depth to Water (Final)*	66.56	ft.	Casing Volume		gal.	Total:	0
* Measuring point	TOC		Pump setting* (intake)	82			

Cont'd 7/21/20
Pump Depth 82

Time / Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
~~Start~~ 1215	36.5						60.20	
1230	38.0	19.58	7.71	0.469	71000		61.20	Grey
1245	39.5							
1300	41.0							
1315	44.0	19.15	7.53	0.460	969		65.30	Grey
1325	45.0	18.05	7.59	0.484	71000		66.56	Grey
6								
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: 45

Physical appearance at start		Physical appearance at end	
Color	Gray	Color	Gray
Odor	Night	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES:

Screen 41-81'

Target Purge Volume 45

see note on page 1.

Geologist Signature: [signature] / DFD

WELL DEVELOPMENT LOG

Well ID: MW25-32

Date	7/15/20	Field Personnel	FTM/AC	Weather	76°; Sunny
Site Name	SEAD 25	Contractor	Pearsall	Project No.	749674
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	16.77 ft.	Date(s) Installed	6-24-20	Date(s) Developed	7/15/20 7/16
Depth to Bottom (Final)*	16.80 ft.	Driller	NYEG	Development Time	Start: 1050
Depth to Water (Initial)*	10.5 10.32 ft.	Well Diameter	2 in.		Stop: 1320
Depth to Water (Final)*	16.26 ft.	Casing Volume	1.028 gal.		Total: 2.5
* Measuring point	TOC	Pump setting* (intake)	12.77, 15.77		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—	23.84	8.07	0.847	>1000	—	10.5	Brown
1	1.75	24.57	7.53	0.869	>1000	0.117	13.1	Brown
2	0.75 2.5	23.62	7.52	0.851	>1000	0.050	12.5	Brown
3	3.50	23.01	7.28	0.860	>1000	0.067	13.35	Brown
4	4.50	23.27	7.27	0.882	>1000	0.067	13.90	Brown
5	5.50	22.78	7.27	0.896	>1000	0.067	14.09	Brown
6	6.25	23.08	7.51	0.884	>1000	0.050	14.68	Brown
7	7.00	22.19	7.62	0.886	>1000	0.050	14.05	Brown
8	8.00	22.41	7.47	0.880	>1000	0.067	14.67	Brown
9	9.00	20.95	7.41	0.882	>1000	0.067	15.90	Brown
10	10.00	20.51	7.36	0.885	>1000	0.067	16.26	Brown
-	Well ran dry							
7/16 -	-	24.83	6.66	0.768	>1000	-	-	Brown
	10 1	20.02	7.39	0.887	957	0.067	10.40	Brown
	2.5	19.43	7.20	0.920	108		11.80	Cloudy
	3.5	20.16	7.25	0.904	149	0.67	11.99	clear/cloudy
	4.5	21.84	7.29	0.900	71.7	0.67	11.95	clear
	5.5	18.73	7.14	0.923	54.9	0.67	12.00	Clear
	7		7.04	0.002	39.5	0.67	12.00	Clear

Development Water Characteristics:

Total volume of Development water removed: > 17

Physical appearance at start

Color: Brown
Odor: None
Sheen/Free Product: None

Physical appearance at end

Color: Brown clear
Odor: None
Sheen/Free Product: None

NOTES: Need to pump 5.14 gal for 5x well volumes
- See Todd Relaxperm development spreadsheet for 5 well volumes and other details

Geologist Signature: Sarah McDonald/Alicia Eck

WELL DEVELOPMENT LOG

Well ID: MW25-33

Date	7/17/20	Field Personnel	A. Cook	Weather	75 Sunny
Site Name	Seneca Army Depot	Contractor	Parratt	Project No.	749674
Site Location	SEAD 25	Evacuation Method	Lectrra + HDPE		

Well Information:

Depth to Bottom (Initial) *	17.20 ft.	Date(s) Installed	6-24-20	Date(s) Developed	7/17/20
Depth to Bottom (Final)*	17.20 ft.	Driller	Mac-S. Barton	Development Time	Start 1155 7/17
Depth to Water (Initial)*	~~9.69~~ 7.05 ft.	Well Diameter	2 in.		Stop 1405
Depth to Water (Final)*	10.51 ft.	Casing Volume	– gal.		Total 3.5 hrs

* Measuring point TOC

Pump setting* (intake) ~~bottom~~ bottom, mid, top of screen

Time / Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft)	Appearance of Water
1155 start	0	20.82	7.82	0.592	>1000	–	8.20	Brown
1195	1.5	19.64	7.37	0.549	648	0.067	9.17	cloudy
1205	3.5	20.08	7.37	0.528	288	0.10	9.60	Cloudy
1225	4.5	19.77	7.31	0.509	189	0.067	9.71	Cloudy
1300 4	6.5	–	–	–	–	–	9.95	clear
1315	8.5	19.73	7.38	0.517	106	0.10	9.95	clear
1340	10	18.31	7.34	0.546	249	0.067	9.61	Cloudy
1400	12	19.34	7.35	0.510	468	0.067	9.62	cloudy
1420	13.5	19.31	7.24	0.514	242	0.067	10.32	Clear
1455	15.5	18.14	7.33	0.533	97.1	0.067	10.51	Clear
10								

Move turbidity pump – Diffuser

Development Water Characteristics:

Total volume of Development water removed: 15.5

Physical appearance at start

Color Brown

Odor none

Sheen/Free Product none

Physical appearance at end

Color clear

Odor None

Sheen/Free Product None

Notes: See Todd Belanger's development spreadsheet for 5 well vols and other details

Geologist Signature: EJ Cook/AE

Page 1 of 1

Monitoring Well Development Form

WELL DEVELOPMENT LOG

Well ID: MW25-345

Date	7/15/20-7/16-7/17	Field Personnel	MCH	Weather	Sunny, 80°F
Site Name	Seneca Army Depot	Contractor	Parsons ~~NA~~	Project No.	749674
Site Location	SEAD 25	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	18.18	ft.	Date(s) Installed	6-25-20	Date(s) Developed	7/15/20-7/16-7/17	
Depth to Bottom (Final)*	18.18	ft.	Driller	MEC	Development Time	Start: 1400/1300	
Depth to Water (Initial)*	8.15/8.89	ft.	Well Diameter	2	in.	Stop: 1600/	
Depth to Water (Final)*	18.05	ft.	Casing Volume	1.63	gal.	Total: 0200/	
* Measuring point	TOC		Pump setting* (intake)	17.18, 12.18			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0.1	20.29	7.79	0.503	636	0.15	9.92	Cloudy
1	1.50	18.97	7.35	0.540	475	0.10	12.83	"
2	2.0	20.09	7.49	0.558	>1000	0.05	15.32	"
3	2.25	21.70	7.51	0.553	749	0.03	15.66	"
4	2.50	20.00	7.52	0.539	744	0.03	16.73	"
5	2.75	20.56	7.55	0.546	701	0.03	17.45	"
Well Dry → 6	3.00	20.92	7.57	0.548	>1000	0.03	18.05	"
7								
Begin 7/16 → 8	0.25	17.45	5.48	0.536	870	0.05	8.87	Cloudy
9	1.0	19.27	6.72	0.516	361	0.08	12.78	"
10	1.75	18.14	6.71	0.515	235	0.08	15.32	"
11	2.50	17.43	6.72	0.516	330	0.08	16.66	"
Well Dry → 12	2.50						17.98	"
13	0.1	16.23	7.07	0.512	198	0.10	7.31	Cloudy
Restart 7/17 → 14	1.5	17.28	6.71	0.518	296	0.16	13.13	"
15	2.75	18.63	6.75	0.513	330	0.09	16.21	"
16	3.0	20.07	6.77	0.522	255	0.03	16.92	"
Well Dry → 17	3.25						18.15	"

Development Water Characteristics:

Total volume of Development water removed: 3 + 2.5 + 3.25 = 8.75

Physical appearance at start		Physical appearance at end	
Color	Brown / Cloudy	Color	Cloudy
Odor	~~NA~~ None	Odor	~~NA~~ None
Sheen/Free Product	~~NA~~ None	Sheen/Free Product	NA none

NOTES: Screen = 6 → 16.

5 well volumes = 1.63 gal x 5 = 8.17 gal

See Todd Belanger's Development Spreadsheet for 5 well vols & other details

Geologist Signature: Elizabeth / MCH

Page 1 of 1

MW 25

WELL DEVELOPMENT LOG

Well ID: 34D

Date	7-20-20	Field Personnel	DFD	Weather	Sunny 80s
Site Name	SEAD	Contractor	Parsons	Project No.	749674
Site Location	SWMU 25	Evacuation Method	Monsoon - HDPE		

Well information:

Depth to Bottom (Initial) *	56.3 ft.	Date(s) Installed	7-2-20	Date(s) Developed	7-20-20
Depth to Bottom (Final)*	56.30 ft.	Driller	MEG	Development Time	Start: See below
Depth to Water (Initial)*	3.78 ft.	Well Diameter	2 in.		Stop:
Depth to Water (Final)*	53.0 ft.	Casing Volume	— gal.		Total:
* Measuring point	TOC	Pump setting* (intake)	54/49/44		

7/20/20 Depth to Pump 54

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
~~Start~~ 0745							~~21.70~~	Grey
0900	3						21.70	Grey
0915	5						34.10	Grey
0930	6	Pumps	stopped - No	Water			41.00	Grey
4								
1315		Pump	went	dark - No	Water		38.10	
6								
7/21/20 0735	Re-check DTW						38.80	
8								
1405							38.75	
1410	15	Pump	went	Dry			40.60	Grey
7/22/20 Start 1055	1.5 gals							
1100	8 total	16.81	8.10	0.444	71000		41.40	
1110		16.12	8.12	0.462	865		51.80	
1112	9.5 total	Pump	ran	dry			53.00	Gray

Development Water Characteristics:

Total volume of Development water removed: 6 gals 7/20; 0.5 gals 7/21; 3 gals 7/22; 9.5 gals total

Physical appearance at start
- Color: Grey
- Odor: None
- Sheen/Free Product: None

Physical appearance at end
- Color: Gray
- Odor: None
- Sheen/Free Product: None

NOTES: - See PDF Parsons Development Spreadsheet for 5 well volumes purged and other details

Geologist Signature: E/ Cantu for AKS

BEDROCK MONITORING WELL
COMPLETION REPORT & INSTALLATION DETAIL
PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: USACOE	WELL #: MW 25 - 34D

PROJECT:	Seneca Army Depot	PROJECT NO:	749674.08000
SWMU # (AREA):	Fayette Road	INSPECTOR:	E. Ashton (Parsons)
SOP NO.:	—	CHECKED BY:	

DRILLING CONTRACTOR:	NYBG	POW DEPTH (ft):	54'
DRILLER:	J. Ranischer	INSTALLATION STARTED:	6-25-20
DRILLING COMPLETED:	6-26-20	INSTALLATION COMPLETED:	6-26-20
BORING DEPTH:	54'	SURFACE COMPLETION DATE:	
DRILLING METHOD(S):	Air-Hammer	COMPLETION CONTRACTOR/CREW:	NYBG
BORING DIAMETER(S):	3 7/8"	BEDROCK CONFIRMED (Y/N?)	Y

PROTECTIVE SURFACE CASING — NA

DIAMETER (ft): _____ LENGTH (ft): _____

RISER

TYPE: PVC TR (ft): 0 (2)

DIAMETER(in): 2 LENGTH (ft): 46 (2)

SURFACE COLLAR

TYPE: _____ RADIUS (ft): _____

THICKNESS OF CENTER (ft): _____ THICKNESS OF EDGE (in): _____

SCREEN

TYPE: PVC TSC (ft): 44

DIAMETER (in): 2 SLOT SIZE: 10-in LENGTH (ft): 10

OUTER CASING

TYPE: Steel drill casing TC (ft): 0 (1)

DIAMETER (in): 4 POC (ft): 18 LENGTH (ft): 18 (1)

POINT OF WELL (SILT SUMP) — NA

TYPE: _____ BSC (ft): _____ POW(ft): _____

GROUT

TYPE: Cement/bent TG (ft): 0 LENGTH (ft): 35

SEAL

TYPE: Bent. chips TBS (ft): 35 LENGTH (ft): 5

SAND PACK

FINE SAND TYPE: Morie #00 TSP (ft): 40 LENGTH (ft): 2

COARSE SAND TYPE: Morie #0 TSP (ft): 42 LENGTH (ft): 12

ACRONYMS

TR	Top of Riser	BSC	Bottom of Screen	TG	Top of Grout
TSC	Top of Screen	POW	Point of Well	TBS	Top of Bentonite Seal
BGD	Background	TSP	Top of Sand Pack		

COMMENTS:

(1.) No water used for drilling

(2)

* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

(1.) Outer casing was set into competent rock at 18' SP and acts as a protective casing.

(2.) Riser extends 2' above surface

(3)

(4) Centralizer (42-43')

CONTRACTOR	WELL NUMBER	FIGURE
PARSONS	MW25-340	1

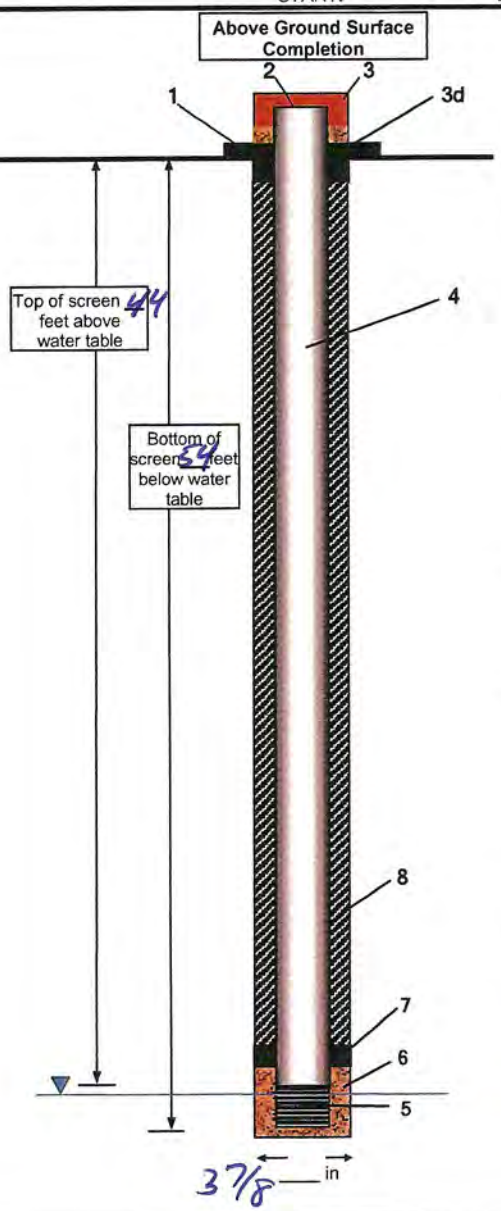
~~Project Name~~ Seneca Army Depot Romulus, NY

Location Groundwater Monitoring Well Fayette Road

WELL INSTALLATION DATA RECORD

PROJECT: Seneca Army Depot, Romulus, NY
DRILLING SUBCONTRACTOR: NYEG
DRILLING METHOD / EQUIPMENT: ATV & air-hammer
WATER LEVEL: START: END:

LOCATION: Fayette Road
DRILLER: J. Ranscht
HELPERS: M. Trevett
GEOLOGIST: E. Ashton



DRAWING NOT TO SCALE

1- Ground elevation at well :

2- Measuring point elevation :

3- Surface completion casing :
- a) type / diameter
- b) height above ground
- c) length below ground
- d) type of sealant
- e) protective bollards

4- Well casing :
- a) type / diameter: PVC / 2"
- b) height above ground: 2'
- c) length below ground: 44'
- d) type / quantity of sealant: —
- e) well centralizers: 42-43'

5- Well screen :
- a) type / diameter: PVC / 2"
- b) slot size: 10-in
- c) length: 10'

6- Well screen filter pack :
- a) type: Morie #00 , Morie #0
- b) length: 2' , 12'

7- Bentonite seal :
- a) method of placement: Free pour from surface
- b) type: chips
- c) length: 5'

8- Grout :
- a) type: Type I
- b) grout mix: cement / bent.
- c) method of placement: Tremie
- d) depth (feet bgs): 0-35'

(9) outer casing:
- 0-18' bgs
- grouted in-place
- steel drill casing (4-N dia)
- Type I grout (cement/bent)

OVERBURDEN BORING REPORT

PARSONS	CLIENT: USACE	BORING NO.: MW25-340
COMMENTS:		DRILLER: J. Ranscher (AMEC)
		INSPECTOR: E. Ashton (Parsons)
		DATE: 6-25-20

DEPTH (Ft)	SAMPLING: BLOWS PER 6 INCHES	SAMPLING: PENETRATION RANGE (FEET)	SAMPLING: RECOVERY RANGE (FEET)	SAMPLE: DEPTH INT (FEET)	SAMPLE: NO.	SAMPLE: VOC	SAMPLE: RAD SCRN	SAMPLE DESCRIPTION (As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)	USCS CLASS	STRATUM CLASS
0'	NA							* See log for #MW25-345 for lithology to 16' bgs. * - Roller bit to 18' bgs w/ water. - Set 4" nom. dia. steel drill casing to 18' bgs and grouted in-place. - No significant water lost to formation during drilling.	NA	NA
18'										

page 1 of 1

CORE BORING REPORT

PARSONS	CLIENT: USACOE	BORING #: MW25-340

PROJECT: Seneca Army Depot
SWMU # (AREA): Fayette Road
SOP NO.:

DATE CORING STARTED: 6-26-20
DATE CORING COMPLETED: 6-26-20
CONTRACTOR: NYSDOT / Parsons
DRILLER: J. Ranscher (NYSDOT)
INSPECTOR: E. Ashton (Parsons)
GEOLOGIST: "
CHECKED BY:
DATE CHECKED:
TOTAL FOOTAGE CORED:
OVERBURDEN THICKNESS:
GALLONS OF WATER USED: —

MONITORING

INTRUMENT	INTERVAL	BACKGROUND	TIME
MiniRae 2000 PID	5'	0-0 ppm	0830

COMMENTS: Air-hammered borehole

CORE EQUIPMENT BARREL LENGTH (ft):

TYPE	SERIES	RANGE	O.D.	I.D.
AH	-	continuous	3 7/8"	NA

DEPTH FEET	RUN # RANGE FEET	CORE RECOVERY FEET	MON. DATA	RQD %	SCHEMATIC STRATA/ FRACTURES	ANGLES DIP/STRIKE (BD,FL,JNT,FC)	BEDROCK/ CORE DESCRIPTIONS AND REMARKS (color, major modifiers, rock type, minor components, bedding or foliation, strike of joints/fractures relative to foliation, weathering on fractures, etc.)
18'	NA	NA	NA	NA		NA	- Start to drill in competent rock at ~ 18' bgs - air-hammered, as approved by USACOE. - no water used - rock cuttings shale ~ 18-38', dry. - wet cuttings at 38' bgs shale. - wet cuttings at 54' bgs stopped borehole. - will construct well from 44-54' bgs to get water bearing zone below 30' of competent rock and seal off so no water affects lower regions.
54'							

INVESTIGATION DERIVED WASTE: — NA

DATE			
SOIL AMOUNT (fraction of drum)			
DRUM #, LOCATION			

5/20/2005

SEAD 26 Well Development Logs

WELL DEVELOPMENT LOG

Well ID: SEAD26-12

Date	5/22/19	Field Personnel	A. Cook + R. Indlimo	Weather	56-60's Cloudy
Site Name	Seneca Army Depot	Contractor	–	Project No.	749674.08000
Site Location	SEAD 26-12	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	13.13'	ft.	Date(s) Installed	5/14/19	Date(s) Developed	5/22/19	
Depth to Bottom (Final)*	13.23'	ft.	Driller	Mark Ewer	Development Time	Start: 0940	
Depth to Water (Initial)*	4.41'	ft.	Well Diameter	2"	in.	Stop: 1515	
Depth to Water (Final)*	12.17'	ft.	Casing Volume		gal.	Total: 5.5	

* Measuring point: TOC Pump setting* (intake):

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
0940 Start	–	13.56	7.79	0.674	>1000	–	4.83'	Cloudy Brown
10:10 1	3.5	14.43	7.30	0.734	>1000	0.11	9.42	cloudy, brown
1035 2	1.5	16.39	7.50	0.718	>1000	0.06	11.74'	" "
11:05 3	~0.3	15.46	7.55	0.684	>1000	0.01	12.11	cloudy
1205 4	1.2	16.44	7.65	0.625	32	0.02	12.01	Clear
12:25 5	0.5	16.57	7.61	0.623	245	0.025	12.11	clear/cl
1255 6	0.5	16.39	7.61	0.613	35.8 91.1	0.025	12.17	Slightly cloudy
13:30 7	0.5	17.51	7.65	0.610	23.9	0.014	12.17	clear
1400 8	0.5	18.00	7.60	0.598	19.4	0.014	12.17	Clear
1417 9	0.23	17.94	7.58	0.608	19.7	0.014	12.17	clear
1446 10	0.4	17.80	7.60	0.590	23.9	0.014	12.18	clear
1500 AK								

dumped @ 3.5 gal decreased pump setting

Development Water Characteristics:

Total volume of Development water removed: ~10.623 gallons

Physical appearance at start		Physical appearance at end	
Color	Brown, turbid	Color	clear
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: 26-13

Date	5/23/19	Field Personnel	A. Cook + B. Fraction	Weather	60-70's cloudy
Site Name	Seneca Army Depot	Contractor	–	Project No.	749679.05020
Site Location	Stand 26-13	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	12.47' ft.	Date(s) Installed	5/13/19	Date(s) Developed	5/23/19
Depth to Bottom (Final)*	12.54' ft.	Driller	Mark Eaves	Development Time	Start 09:10
Depth to Water (Initial)*	7.50' ft.	Well Diameter	2 in.		Stop: 15:25
Depth to Water (Final)*	10.96' ft.	Casing Volume	gal.		Total: 4hr 15min
* Measuring point	TOC	Pump setting* (intake)			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
0910 Start	–	13.59	7.07	0.995	898	–	8.23	cloudy, brown
0945 1	1	14.97	7.03	0.988	>1000	0.028	9.20	cloudy, brown - yellowish
10:25 2	1	16.24	7.18	1.00	912	0.025	10.54	cloudy, l. brown
11:10 3	1.12	17.10	7.37	0.979	97.5	0.025	10.85	cloudy
11:45 4	1.12	17.79	7.52	0.978	20.6	0.025	11.00	clear
12:30 5	1.12	18.04	7.60	0.969	17.2	0.025	10.97	clear
12:55 6	1.12	18.57	7.59	0.981	17.9	0.025	10.97	clear
13:30 7	0.875	18.95	7.60	0.979	10.1	0.025	10.95	clear
14:05 8	0.875	18.26	7.46	0.936	17.1	0.025	10.97	clear
14:40 9	0.875	20.81	7.62	0.976	9.3	0.025	10.97	clear
15:00 10	0.5	20.39	7.50	0.912	8.6	0.025	10.96	clear
15:17	0.5	19.30	7.57	0.958	7.8	0.025	10.96	clear

Development Water Characteristics:

Total volume of Development water removed: 10.105

Physical appearance at start		Physical appearance at end	
Color	Brown	Color	clear
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: 26-14

Date: 5/23/19
Site Name: Seneca Army Depot
Site Location: SEAD 26-14

Field Personnel: A. Cook + R. Fradine
Contractor: –
Evacuation Method: Waterra

Weather: 60-70, cloudy
Project No.: 749674.03000

Well information:

Depth to Bottom (Initial)*: 14.10 ft.
Depth to Bottom (Final)*: ft.
Depth to Water (Initial)*: 10.01 ft.
Depth to Water (Final)*: 12.63 ft.

* Measuring point: TOC

Date(s) Installed: 5/14/19
Driller: Mark Eaves
Well Diameter: 2 in.
Casing Volume: gal.
Pump setting* (intake):

Date(s) Developed: 5/23/19
Development Time: Start: 0930 Stop: 1550 Total: 4hr 20 min

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
0930 Start	–	13.54	7.17	1.03	>1000	–	10.5	brown, turbid
09:55 1	2	13.31	6.88	1.08	>1000	0.08	12.59	brown, cloudy
10:35 2	1	15.95	7.02	1.11	114	0.025	12.62	clearish
1126 3	1.125	15.58	7.13	1.11	55.3	0.025	12.61	clear
1200 4	1.125	15.45	7.09	1.11	37.3	0.025	12.61	Clear
12:40 5	1	16.32	7.02	1.10	40.5	0.025	12.61	clear
1305 6	1	~~15.~~ 16.01	7.13	1.11	36.7	0.025	12.65	Very slightly cloudy - clear
13:40 7	0.8	17.25	7.01	1.10	21.7	0.025	12.62	clear
~~1425~~ 8 1415	0.87	16.22	7.15	1.11	37.7	0.025	12.62	Clear
1445 9	0.75	18.91	6.93	1.09	29.6	0.025	12.63	clear
1535 10	0.7	17.10	7.11	1.09	45.3	0.025	12.63	Slightly Cloudy

Margin notes: "lowered pump setting" (at row 1); "less than 2' of water possibly agitating bottom + slight sheen" (at row 10)

Development Water Characteristics:

Total volume of Development water removed: 12

Physical appearance at start
Color: Brown Turbid
Odor: None
Sheen/Free Product: Slight sheen

Physical appearance at end
Color: Slightly Cloudy
Odor: None
Sheen/Free Product: Slight sheen

NOTES: less than 1.5' of water ~~at~~ towards end, may be causing turbidity to fluctuate 20-40's and/or slight sheen may be causing turbidity inconsistencies.

Geologist Signature: [signature]

Monitoring Well Development Form

WELL DEVELOPMENT LOG

Well ID: SEAD 26-15

Date	5/22/19	Field Personnel	A. Cook + R. Incliman	Weather	50's 60's Cloudy
Site Name	Seneca Army Depot	Contractor	—	Project No.	74674.08000
Site Location	SEAD 26-12	Evacuation Method	Waterra		

Well Information:

Depth to Bottom (Initial) *	9.81'	ft.	Date(s) Installed	5/17/19		Date(s) Developed	5/22/19
Depth to Bottom (Final)*	9.85'	ft.	Driller	Mark Eaves		Development Time	Start: 0955
Depth to Water (Initial)*	3.29'	ft.	Well Diameter	2"	in.		Stop: 1540
Depth to Water (Final)*	3.46'	ft.	Casing Volume		gal.		Total: 6

* Measuring point: TOC

Pump setting* (intake):

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
0955 Start	-	12.16	7.42	0.972	>1000	—	3.61	Brown
1020 1	16	11.90	7.19	1.00	131	0.24	3.81	Cloudy
1045 2	7	11.79	7.11	1.01	49.4	0.35	3.65	Slightly Cloudy
1115 3	7	11.82	7.24	1.00	81.7	0.35	3.88	" "
1215 4	14	12.42	7.21	0.998	31.7	0.35	3.94	Clear
1245 5	10.5	11.55	7.37	1.01	25.8	0.35	3.95	clear
1305 6	7	11.98	7.16	0.994	27.2	0.35	3.88	Clear
1350 7	15.75	13.51	7.44	0.969	37.6	0.35	3.94	clear
1410 8	8	12.84	7.12	0.982	21.6	0.35	3.91	Clear
1435 9	8.75	13.42	7.22	0.949	23.5	0.35	3.91	clear
1500 10	8.75	12.51	7.13	0.972	21.6	0.35	3.92	clear
1520	7	12.21	7.23	0.974	15.1	0.35	3.87	Clear
1540	6	11.03	7.12	1.00	8.1	0.35	3.87	Clear

Development Water Characteristics:

Total volume of Development water removed: 104.75

Physical appearance at start

Color: Brown

Odor: Slight sulfur

Sheen/Free Product: & None

Physical appearance at end

Color: Clear

Odor: None

Sheen/Free Product: None

NOTES:

Geologist Signature: [signature]

WELL DEVELOPMENT LOG

Well ID: 26-16

Date	5/24/19	Field Personnel	A.Conti R. Indimn	Weather	50-60's cloudy
Site Name	SEDA	Contractor	—	Project No.	149674.08000
Site Location	SEAD26-16	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial)*	9.45 ft.	Date(s) Installed	5/15/19	Date(s) Developed	5/24/19
Depth to Bottom (Final)*	9.48 ft.	Driller	Mark Eaves	Development Time	Start: 1005
Depth to Water (Initial)*	1.91 ft.	Well Diameter	2" in.		Stop: 16:42
Depth to Water (Final)*	2.52 ft.	Casing Volume	gal.		Total: 6 hrs 47 min
* Measuring point	TOC	Pump setting* (intake)			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
1005 Start	—	11.84	07.61	0.869	>1000	—	2.76'	Brown
10:25 1 (lowered pump setting)	8	11.06	7.34	0.856	>1000	0.4	2.76	brown, turbid
10:45 2	13	11.12	7.14	0.865	585	0.65	2.78	brown, cloudy
11:05 3	10	11.06	6.93	0.863	285	0.5	2.52	cloudy
11:30 4	11.25	11.25	7.08	0.857	106	0.45	2.40	clearish
11:55 5	12.5	11.07	7.03	0.863	82.3	0.5	2.51	clearish
12:30 6	15.75	11.60	6.98	0.857	113	0.45	2.51	clearish
12:50 7	9	11.74	6.98	0.848	115	0.45	2.53	clearish
13:15 8	11.25	12.03	6.95	0.845	78.1	0.45	2.53	clearish
13:35 9	9	11.70	6.95	0.845	67.9	0.45	2.52	clear
13:55 10	8.4	11.39	6.47	0.849	64.9	0.42	2.52	clear
14:20	10.5	11.57	6.94	0.845	63.0	0.42	2.51	clear
14:40	8.4	11.52	6.98	0.853	53.9	0.42	2.53	clear
15:10	12.6	12.26	6.99	0.841	62.7	0.42	2.55	clear
15:41	13	11.98	6.96	0.836	70.4	0.42	2.54	clearish
16:15	14.3	12.06	6.96	0.829	73.5	0.42	2.54	clearish
16:40	10.5	11.49	6.95	0.839	80.3	0.42	2.52	clearish

Development Water Characteristics:

Total volume of Development water removed: 167.2g

Physical appearance at start		Physical appearance at end	
Color	brown	Color	Clearish
Odor	None	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES:

Geologist Signature: [signature]

WELL DEVELOPMENT LOG

Well ID: 26-17

Date	5/24/16	Field Personnel	A. Cook, R. Inclan	Weather	50-60s, cloudy
Site Name	EDA	Contractor	–	Project No.	749674.08000
Site Location	SEAD 26-17	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	8.90 ft.	Date(s) Installed	5/5/16	Date(s) Developed	5/24/16		
Depth to Bottom (Final)*	8.82 ft.	Driller	Nova Eaves	Development Time	Start: 10:15		
Depth to Water (Initial)*	3.11 ft.	Well Diameter	2 in.		Stop: 16:55		
Depth to Water (Final)*	3.15 ft.	Casing Volume	gal.		Total: 7hrs 10 min		
* Measuring point	TOC	Pump setting* (intake)					

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	–	12.54	7.18	0.658	>1000	–	3.22	milky brown, turbid
10:35 1	2.5	11.56	7.00	0.647	>1000	0.125	3.36	lgt brown, turbid
10:55 2	1.5	11.43	7.14	0.648	>1000	0.075	3.36	cloudy brown
11:20 3	1.9	12.09	7.40	0.634	994	0.075	3.40	cloudy
11:45 4	1.9	12.01	7.30	0.642	>1000	0.075	3.40	cloudy
12:20 5	2.5	12.36	7.02	0.635	337	0.071	3.41	cloudy
12:40 6	2.5	13.28	7.28	0.640	86.5	0.125	3.37	clearish
13:05 7	(RS) 1.5	12.88	7.08	0.639	115	0.075	3.35	clearish
13:25 8	2	12.63	6.98	0.635	36.0	0.1	3.38	clear
13:50 9	1.5	12.46	7.06	0.634	21.5	0.06	3.38	clear
14:10 10	1.5	12.47	7.12	0.634	19.7	0.075	3.33	clear
14:35	1.8	12.80	7.08	0.636	29.5	0.075	3.38	clear
14:55	1.5	13.88	7.10	0.623	30.6	0.075	3.38	clear
15:35	3	13.74	6.99	0.615	46.0	0.075	3.39	clear
16:05	2.3	13.36	7.09	0.619	24.5	0.075	3.20	clear
16:30	3.1	12.96	7.06	0.618	>1000	0.125	3.59	cloudy

dumped bucket

dumped bucket

dumped bucket

dumped bucket

Development Water Characteristics:

Total volume of Development water removed: 30

Physical appearance at start		Physical appearance at end	
Color	milky brown	Color	cloudy
Odor	none	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES:

Geologist Signature:

14:10

WELL DEVELOPMENT LOG

Well ID: MW26-18

Date	9/18/19	Field Personnel	AFM	Weather	70s, sunny
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	749674.0000
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well Information:

Depth to Bottom (Initial) *	14.2	ft.	Date(s) Installed		Date(s) Developed	9/18/19
Depth to Bottom (Final)*	14.2	ft.	Driller	Parratt Wolff	Development Time	Start: 1155
Depth to Water (Initial)*	11.62	ft.	Well Diameter	2 in.		Stop: 1215
Depth to Water (Final)*	14.2	ft.	Casing Volume	0.42 gal.		Total: 20 min
* Measuring point	top of casing		Pump setting* (intake)	screen		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—						11.62	gray/brown
1	0.42				>1000	0.32	14.20	↓
2	0.84	WELL IS DRY, Allow recharge + will return						
3	1.26							
4	1.68							
5		RETURN AND MANUAL SURGE						
6		1 foot recharge after 2 hrs →						
7					194 NTU ←			
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: 0.80 gal

Physical appearance at start		Physical appearance at end	
Color	gray brown	Color	clear
Odor	none	Odor	
Sheen/Free Product	none	Sheen/Free Product	

NOTES:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: MW26-18

Date	10/15/19	Field Personnel	JM, FM	Weather	Sunny, Lows 60's
Site Name	Seneca Army Depot	Contractor	Parsons	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	Waterra Pump		

Well information:

Depth to Bottom (Initial) *	13.81 ft.	Date(s) Installed		Date(s) Developed	10/15/19
Depth to Bottom (Final)*	ft.	Driller		Development Time	Start: 1500
Depth to Water (Initial)*	9.13 ft.	Well Diameter	2 in.		Stop: 1745
Depth to Water (Final)*	13.65 ft.	Casing Volume	0.76 gal.		Total: 2hr 45min
* Measuring point	Top of inner casing	Pump setting* (intake)	~13.25 Ft		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity ~~mS/cm~~ µS/cm	Turbidity (NTU)	Approximate Flow Rate ~~(gal/min)~~ mL/min	Depth to Water (ft.)	Appearance of Water
Start								
* 1	0.75	16.6	7.46	710	>1000	650	11.22	cloudy/turbid
* 2	1.5	16.2	7.54	604	>1000	1000	12.80	cloudy
** 3	2.25	16.6	7.51	611	>1000	500	13.70	cloudy
** 4	3.00	14.6	7.28	609	303	300	13.50	cloudy
** 5	3.75	13.7	7.09	600	55.0	600	13.65	clear
6								
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: 3.75 Gal

Physical appearance at start

Color: cloudy/turbid
Odor: none
Sheen/Free Product: none

Physical appearance at end

Color: clear
Odor: none
Sheen/Free Product: none

NOTES: Development equipment: Delrin SBD-25 Surge Block, Delrin D25 Foot Valve, HDPE tubing, Waterra HydroLift II
Monitoring equipment: Heron Skinny Dipper (DTW), YSI (water quality measurements)

* surged for ~10 min with surge block & foot valve
** surged for ~5 min with surge block & foot valve

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: MW26-19

Date	07/15/20	Field Personnel	CFB	Weather	Hot, Humid
Site Name	Seneca [illegible]	Contractor	Parsons	Project No.	749674
Site Location	[illegible] well - SEAD 26	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	18.08 ft.	Date(s) Installed	6-24-20	Date(s) Developed	07/15/20 07/16/20
Depth to Bottom (Final)*	18.02 ft.	Driller	MEG	Development Time	Start: 07/15 2:20
Depth to Water (Initial)*	8.35 ft.	Well Diameter	2.0 in.		Stop: 07/16 8:20
Depth to Water (Final)*	16.62 ft.	Casing Volume	— gal.		Total: 2 [illegible]
* Measuring point	T.O.C	Pump setting* (intake)	—		

	Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.) (Initial)	Appearance of Water
	Start							8.38	cloudy
2:20	1	2.5 gal	18.94	7.27	.599	1000	.1667	16.61	
2:40	2	3.0 gal	—	—	—	—	—	16.62	
	3		Well	Dry	@ 3:00				
	4	← Start	of 2nd	Day →					
7:[illegible]	5	3.0		—	—	—	—	13.62	
7:50	6	3.25	1[illegible]	7.[illegible]	.[illegible]	64.2	.0[illegible]	16.17	
8:10	7	3.50	18.21	[illegible]	.091	39.0	.01[illegible]	16.26	
8:30	8	.75	—	—	—	—	.0167	16.62	
	9		Dry -	could not take	water	sample for	Humidity		
11:[illegible]	10		← Start	3rd Day	→				DTB
11:30						↓		14.25	17.82
11:45	11	.500	18.03	7.28	.099	39.7	.0167	14.96	cloudy
12:00	12	.75	22.8	7.22	.105	36.1	.0167	16.98	
12:15	13	1.00	20.2	7.45	.710	40.4	.0167	17.68	
			Well	Dry -	not	enough	sample for	[illegible]	

Development Water Characteristics:

Total volume of Development water removed: 3.75 gal - day 2

Physical appearance at start

Color: Cloudy

Odor: None

Sheen/Free Product: None

Final DTW 17.[illegible]
DTB 17.82

Physical appearance at end

Color: Cloudy

Odor: None

Sheen/Free Product: None

NOTES:
Day 3 - pump set at 1' off bottom - pumped for 15 min at varied rates, but no water [illegible]

Geologist Signature: E [illegible] for CFB

* Waterra set at 1' off bottom & pump - no pumping at 2.0' off bottom

See Todd Bo[illegible] Download Sonde sheet for 5 well volume

Monitoring Well Development Form

WELL DEVELOPMENT LOG

Well ID: MW26-20

Date	9/17/19	Field Personnel	RP	Weather	70°; Sunny
Site Name	SEDA	Contractor	Parratt Wolff	Project No.	749674.08000
Site Location	Romulus, NY	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	13.15	ft.	Date(s) Installed	9/12/19	Date(s) Developed	9/17/19
Depth to Bottom (Final)*	13.20	ft.	Driller	Parratt Wolff	Development Time	Start: 1255
Depth to Water (Initial)*	2.02	ft.	Well Diameter	2 in.		Stop: 1415
Depth to Water (Final)*	3.95	ft.	Casing Volume	0.163 gal.		Total: 80 min
* Measuring point	top of casing		Pump setting* (intake)	0.253 gal/min.		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	1.8	17.55	7.25	0.645	>1000	–	2.65	brown
1	3.61	17.39	7.17	0.667	>1000	0.253	3.32	cloudy
2	5.42	16.87	6.96	0.663	>1000	0.253	3.68	brown
3	7.23	16.93	6.95	0.662	>1000	0.253	3.85	cloudy
4	9.04	16.75	6.80	0.658	364	0.253	3.67	cloudy
5	10.85	16.55	6.84	0.657	154	0.253	3.85	clearish
6	12.66	16.48	6.97	0.660	112	0.253	3.87	clearish
7	14.47	16.64	7.24	0.664	69.2	0.253	3.84	clear
8	16.28	16.49	7.13	0.659	67.0	0.253	3.91	clear
9	18.09	16.37	7.24	0.660	55.8	0.253	3.94	clear
10	19.9	16.43	7.34	0.655	48.6	0.253	3.95	clear

need manual purge

manual

Development Water Characteristics:

Total volume of Development water removed: ~20 gallons

Physical appearance at start

Color: brown
Odor: none
Sheen/Free Product: none

Physical appearance at end

Color: clear
Odor: none
Sheen/Free Product: none

NOTES: WC: 11.13'; well volume: 1.81; 5 well volumes: 9.07; 10 well volumes: 18.14
1255 - Manual purged ~1 well volume (~1.8 gal); 1300 - started waterra; 1310 - manual purge; 1315 - started waterra;

Geologist Signature:

$\frac{160}{10} = \frac{x}{60}$ $10x = 9600$ $x = 960 mL = 0.253 gal/min$

WELL DEVELOPMENT LOG

Well ID: MW-26-21

Date	6/24/20	Field Personnel	MCH	Weather	Sunny, 78°F
Site Name	Seneca Army Depot	Contractor		Project No.	74674.054
Site Location	SEAD-26	Evacuation Method	Waterra Pump		

Well information:

Depth to Bottom (Initial) *	17.52 ft.	Date(s) Installed		Date(s) Developed	6/24/20
Depth to Bottom (Final)*	17.52 ft.	Driller		Development Time	Start: 1255
Depth to Water (Initial)*	5.61 ft.	Well Diameter	4 in.		Stop: 1527
Depth to Water (Final)*	6.11 ft.	Casing Volume	10 gal.		Total: 2:32
* Measuring point	TOC	Pump setting* (intake)	16.52		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0.25	15.70	7.73	0.404	>1000	500	6.23	Turbid Brown
1	1.0	15.34	7.39	0.402	>1000	500	7.61	"
2	3.0	16.11	7.33	0.400	>1000	500	6.20	"
3	4.0	17.51	7.25	0.395	>1000	350	6.38	"
4	5.25	17.31	7.40	0.388	439	350	6.29	Cloudy
5	6.0	16.63	7.38	0.387	233	300	6.27	"
6	7.0	16.75	7.42	0.383	137	400	6.53	"
7	8.25	16.32	7.35	0.395	83.4	400	6.42	"
8	9.50	16.29	7.21	0.388	113	375	6.34	clear
9	10.75	17.12	7.40	0.383	35.5	375	6.40	"
10	12.25	16.52	7.38	0.389	41.4	375	6.27	"

Development Water Characteristics:

Total volume of Development water removed: 12.25 gal

Physical appearance at start		Physical appearance at end	
Color	Brown/Cloudy	Color	Clear
Odor	NA	Odor	NA
Sheen/Free Product	NA	Sheen/Free Product	NA

NOTES: NC x 0.162 = 1.93 gal x5 = 9.65 gal (5 well volumes)

Geologist Signature: MCH

WELL DEVELOPMENT LOG

Well ID: MW-26-22

Date	6/23/20 - 6/24/20 (6/25)	Field Personnel	MCH IAC	Weather	Sunny, 90°F
Site Name	Seneca Army Depot	Contractor	NUS	Project No.	7496-14-05000
Site Location	SEAD 26	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	17.84/17.73 (17.81) ft.	Date(s) Installed	6/18/20	Date(s) Developed	6/23-24/20
Depth to Bottom (Final)*	17.79/17.9 ft.	Driller	S. Boor	Development Time	Start: ~~1500~~ 1500/1535
Depth to Water (Initial)*	5.93/6.01 ft.	Well Diameter	2 in.		Stop: 1600/1620
Depth to Water (Final)*	9.81/11.2 ft.	Casing Volume	10 gal.		Total: 1:00/0:45
* Measuring point	TOC Marked	Pump setting* (intake)	16.84		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0.25					500mL	7.32	Brown
1	1.0	19.67	7.92	0.371	>1000	450mL	9.83	"
2	1.5	17.65	7.27	0.386	>1000	350mL	10.92	"
3	3.25	17.39	7.17	0.383	>1000	400mL	11.65	"
4	4.00					400mL	11.95	"
Stopped for day								
5								
6								
6/24 → 7	0.25	15.43	7.54	0.382	>1000	500mL	6.40	Brown
8	1.00	15.54	7.39	0.391	>1000	500mL	9.91	"
9	2.50	17.87	7.51	0.386	>1000	400mL	10.21	"
10	3.75	18.23	7.65	0.388	>1000	400mL	10.31	"
6/25 → 4	—	16.52	8.00	0.386	71000	—	6.94	Brown
	1	16.08	7.77	0.387	71000	6.06	8.91	Brown
	2.25	14.77	7.81	0.387	71000	0.4500L	9.01	Brown
	4	14.74	7.42	0.388	71000	0.15	10.11	"

Development Water Characteristics

Total volume of Development water removed: 7.75+5

Physical appearance at start
- Color: Brown/cloudy
- Odor: NA
- Sheen/Free Product: NA

Physical appearance at end
- Color: Brown/Cloudy
- Odor: NA
- Sheen/Free Product: None

NOTES: Well purged 2 times, pumped at 12.75 gallons all together.

Geologist Signature: [signature]

WC x 0.162 = x5 = 9.647 gal (5 well volumes)

WELL DEVELOPMENT LOG

Well ID: MW26-23

Date	8/28/2020	Field Personnel	Matt Muto	Weather	Sunny 70°
Site Name	Seneca Army Depot	Contractor	Parsons	Project No.	749674
Site Location	SEAD 26	Evacuation Method	Waterra		

Well Information:

Depth to Bottom (Initial) *	15.02 ft.	Date(s) Installed	8-26-20	Date(s) Developed	8/28/2020
Depth to Bottom (Final)*	15.02 ft.	Driller	NYEG	Development Time	Start: 1005
Depth to Water (Initial)*	6.03 ft.	Well Diameter	2 in.		Stop: 1300
Depth to Water (Final)*	6.18 ft.	Casing Volume	— gal.		Total: See below
* Measuring point	TOC	Pump setting* (intake)	14'		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
1005 Start		12.41	6.23	0.639	>1000	200	6.05	Brown
1015 1		14.44	5.97	0.663	>1000	200	6.05	Brown
1025 2		14.76	5.88	0.668	821	200	6.15	Brown
1035 3		15.03	5.86	0.667	91.4	200	6.17	Clear
1045 4		15.18	5.84	0.665	44.1	200	6.15	Clear
1055 5		15.14	5.84	0.664	72.1	200	6.15	Clear
1105 6	3.69	15.12	5.84	0.664	94.0	200	6.15	Clear
1115 7		15.20	5.82	0.665	40.8	250	6.15	Clear
1125 8		15.14	5.98	0.669	50.1	250	6.17	Clear
1135 9		15.14	5.99	0.668	60.2	250	6.17	Clear
1145 10		15.14	5.96	0.669	69.2	250	6.17	Clear
1155		15.14	5.97	0.667	54.7	250	6.18	Clear
1205		15.14	5.97	0.667	50.2	250	6.18	Clear
1215	3.20	15.14	5.97	0.667	45.5	250	6.18	Clear
1225		15.19	5.97	0.665	15.6	250	6.18	Clear
1235		15.21	5.95	0.665	10.1	250	6.18	Clear
1245		15.23	5.92	0.665	8.9	250	6.18	Clear
1255		15.22	5.91	0.665	3.2	250	6.18	Clear
1305		15.28	5.91	0.665	0.0	250	6.19	Clear

Development Water Characteristics:

Total volume of Development water removed: ~12 gal.

Physical appearance at start
- Color: Brown
- Odor: NONE
- Sheen/Free Product: None

Physical appearance at end
- Color: Clear
- Odor: NONE
- Sheen/Free Product: None

NOTES: See Rob Belanger's development spreadsheet for 5 well vols and other details

Geologist Signature: Matt Muto

15' − 6.03' = × 0.163 × 3 = 4.3 gal.

WELL DEVELOPMENT LOG

Well ID: MW26-23D

Date	8/28/2020	Field Personnel	Matt Muto	Weather	Sunny 70
Site Name	Seneca Army Depot	Contractor	Parratt	Project No.	7496794
Site Location	SEAD 26	Evacuation Method	Bladder		

Well Information:

Depth to Bottom (Initial) *	57.83 ft.	Date(s) Installed	5-27-20	Date(s) Developed	8/28/2020
Depth to Bottom (Final)*	57.84 ft.	Driller	NYEG	Development Time	Start: 0820
Depth to Water (Initial)*	4.89 ft.	Well Diameter	2 in.		Stop: 1300
Depth to Water (Final)*	5.51 ft.	Casing Volume	— gal.		Total: [illegible]
* Measuring point	TOC	Pump setting* (intake)	~56		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (~~gal/min~~)	Depth to Water (ft.)	Appearance of Water
0820 Start		14.91	6.92	0.522	>1000	150	5.00	Brown
0830 1		14.31	6.39	0.500	>1000	150	5.04	Brown
0840 2		11.02	6.05	0.531	650	150	5.04	Gray
0850 3		10.84	5.97	0.532	95.1	150	5.07	Clear
0900 4		10.87	5.95	0.532	15.0	150	5.08	Clear
0910 5		11.06	5.97	0.530	0.0	150	5.11	Clear
0920 6		11.07	5.96	0.533	0.0	300	5.50	Clear
0930 7		10.11	5.98	0.530	0.0	300	5.50	Clear
0940 8		10.12	5.99	0.530	0.0	300	5.50	Clear
0950 9		10.08	6.01	0.529	0.0	300	5.50	Clear
1000 10		10.11	6.01	0.530	0.0	300	5.50	Clear
1010	7.13 gal	10.12	6.02	0.530	0.0	300	5.50	Clear
1020		10.12	6.02	0.530	0.0	300	5.51	Clear
1030		10.12	6.01	0.530	0.0	300	5.51	Clear
1110	11.88 gal							

Development Water Characteristics:

Total volume of Development water removed: ~25 gal

Physical appearance at start
- Color: Brown
- Odor: NONE
- Sheen/Free Product: None

Physical appearance at end
- Color: Clear
- Odor: NONE
- Sheen/Free Product: None

NOTES: - See Todd Relanger's development spreadsheet for 5 well vols and other details

Geologist Signature: Matt Muto

25 gallons = 3 well volumes

9000 + 18000 = 27000 mL

Monitoring Well Development Form

* Parameters stabilized, continued pumping till 3 well volumes were removed

WELL DEVELOPMENT LOG

Well ID: MW26-2

Date	8/26/2020	Field Personnel	Matt Mott	Weather	80 Sunny
Site Name	SEAD 26	Contractor	Parsons	Project No.	749679
Site Location	Rome, NY	Evacuation Method	waterra		

Well Information:

Depth to Bottom (Initial) *	17.80 ft.	Date(s) Installed	8-25-20	Date(s) Developed	8/26
Depth to Bottom (Final)*	17.80 ft.	Driller	NYEG	Development Time	Start: 1340
Depth to Water (Initial)*	10.40 ft.	Well Diameter	2 in.		Stop: 1535
Depth to Water (Final)*	15.5 ft.	Casing Volume	– gal.		Total: 1hr 55 min

* Measuring point Top of outer casing

Pump setting* (intake) 15.5'

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate ~~(gal/min)~~ mL/min	Depth to Water (ft.)	Appearance of Water
1340 Start	0	21.09	6.58	1.05	>1000	200	10.40	Gray
1350 1		19.02	6.18	1.09	>1000	200	12.57	Gray
1400 2		20.59	6.15	1.11	>1000	150	12.65	Gray
1410 3		21.42	6.13	1.06	>1000	150	13.70	Gray
1420 4		21.22	6.10	1.06	>1000	150	13.82	Gray
1430 5		21.16	6.09	1.06	>1000	150	14.12	Gray
1440 6		20.94	6.08	1.07	>1000	150	~~1450~~ 1440	Gray
1450 7		20.56	6.08	1.07	>1000	150	14.71	Gray
1500 8		20.81	6.07	1.07	>1000	150	14.82	Gray
1510 9		20.92	6.05	1.07	>1000	150	14.95	Gray
1520 10		20.80	6.05	1.07	>1000	150	15.10	Gray
1530 11		20.54	6.04	1.07	>1000	150	15.23	Gray
1535 12	4	20.25	6.04	1.07	>1000	150	DRY	Gray

Development Water Characteristics:

Total volume of Development water removed: 4+4=8

Physical appearance at start

Color: Gray
Odor: NONE
Sheen/Free Product: NONE

Physical appearance at end

Color: Gray
Odor: NONE
Sheen/Free Product: NONE

NOTES: - See Todd Belanger's development log sheet for 5 well IDs and other details

Geologist Signature: Matt Mott

4 gallons removed on 8/26/2020

WELL DEVELOPMENT LOG

Well ID: MW26-2

Date	8/27/2020	Field Personnel	Matt Muto	Weather	Sunny 70°
Site Name	SEAD 26	Contractor	Parsons	Project No.	749674
Site Location	Romulus	Evacuation Method	Western		

Well Information:

Depth to Bottom (Initial) *	17.30 ft.	Date(s) Installed	8-25-20	Date(s) Developed	8/26 + 8/27
Depth to Bottom (Final)*	17.80 ft.	Driller	NYEG	Development Time	Start: 0940
Depth to Water (Initial)*	10.00 ft.	Well Diameter	2 in.		Stop: 1110
Depth to Water (Final)*	DRY ft.	Casing Volume	— gal.		Total: See below

* Measuring point Top of outer casing

Pump setting* (intake) ~15.5

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
0940 Start		21.36	6.61	0.854	990	~150	11.03	Gray
0950 1		21.47	6.55	0.783	361	~150	12.00	Gray
1008 2		21.42	6.78	1.03	263	~150	13.25	Gray
1020 3		21.83	6.16	1.05	60.5	~150	13.81	Clear
1036 4		21.85	6.10	1.07	27.1	~150	14.20	Clear
1040 5		23.71	6.15	1.05	9.8	~150	14.40	Clear
1050 6		24.40	6.14	1.03	8.8	~150	14.55	Clear
1100 7		24.50	6.11	1.03	7.1	~150	14.90	Clear
1110 8		23.17	6.04	1.08	6.0	~150	15.15	Clear
9	4	24.53	6.08	1.07	0.0	~150	DRY	Clear
10								

Development Water Characteristics:

Total volume of Development water removed: 4 + 4 = 8 total

Physical appearance at start
- Color: Gray
- Odor: NONE
- Sheen/Free Product: NONE

Physical appearance at end
- Color: Clear
- Odor: NONE
- Sheen/Free Product: NONE

NOTES: See page 1

Geologist Signature: Matt Muto

Page 1 of 3

WELL DEVELOPMENT LOG

Well ID: MW26-2

Date	8/26/2020	Field Personnel	J. Goldhammer	Weather	Part. Sunny
Site Name	MW26-25	Contractor	Parsons	Project No.	749674
Site Location	Seneca Army Depot	Evacuation Method	watera		

Well Information:

Depth to Bottom (Initial) *	16.89 ft.	Date(s) Installed	8-24-20	Date(s) Developed	8/26/2020
Depth to Bottom (Final)*	16.89 ft.	Driller	MEC	Development Time	Start: 1250
Depth to Water (Initial)*	9.55 ft.	Well Diameter	2 in.		Stop: 1355
Depth to Water (Final)*	16.35 ft.	Casing Volume	~ gal.		Total: 1hr 5min
* Measuring point	TOC	Pump setting* (intake)	bottom mid, up	HYDROLIFT II	

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	STOPPED	20.01	7.82	0.416	0.0			
1	→	22.32	7.57	0.397	854			Cloudy
2	1.9 ↓	19.65	7.47	0.429	439			Cloudy
3	1.9	18.98	7.30	0.445	491		12.6	Cloudy
4	2.4	18.97	7.29	0.446	545		14.1	Cloudy
5	2.8	19.14	7.30	0.445	928		14.6	Muddy
6	3.1	19.55	7.30	0.444	0.0		15.2	Muddy
7	3.2	19.59	7.32	0.445	0.0	15.4		Muddy
8	3.3	19.92	7.32	0.444	0.0		15.75	Muddy
9	3.35	19.88	7.34	0.441	0.0		16.0	CLOUDY
10	PUMPED OUT						16.2	CLOUDY

1250
1300
1310
1320
1325
1330
1335
1340
1345
1350
1355

Development Water Characteristics:

Total volume of Development water removed: 3.4 + 2.8 + 3.35 = 9.55

Physical appearance at start

Color: CLOUDY-MUDDY LT BROWN
Odor: NONE
Sheen/Free Product: NONE

Physical appearance at end

Color: SAME
Odor: SAME
Sheen/Free Product: SAME

NOTES: STARTED AGAIN WITH A DIFFERENT HORIBA - to Todd Reinforce development spread sheet for 5 well vols and other details

Geologist Signature: [signature] for JG

WELL DEVELOPMENT LOG

Well ID: MW26-25

Date: 8/27/2020 | Field Personnel: J. Gaichthwait | Weather: Mostly cloudy
Site Name: MW26-25 | Contractor: Parsons | Project No.: 749674
Site Location: Seneca Army Depot | Evacuation Method: waterra

Well Information:

Depth to Bottom (Initial) *	16.89 ft.	Date(s) Installed	8-24-20	Date(s) Developed	8/26/2020
Depth to Bottom (Final)*	16.89 ft.	Driller	MBG	Development Time	Start: 0950
Depth to Water (Initial)*	9.85 ft.	Well Diameter	2 in.		Stop: 1020
Depth to Water (Final)*	16.35 ft.	Casing Volume	– gal.		Total: 25
* Measuring point	TOC	Pump setting* (intake)	bottom, mid, up	HYDROLIFT II	

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start		19.74	5.57	0.434	867			
1	.8	19.25	6.58	0.429	755		9.85	Muddy
2	1.6	19.37	6.89	0.433	424		12.5	Muddy
3	2.8	20.09	7.04	0.437	366		14.6	Muddy
4							16.2	Muddy
5								
6								
7								
8								
9								
10								

0955
1000
1010
1020

Development Water Characteristics:

Total volume of Development water removed: 2.8 + 3.4 + 3.35 = 9.55

Physical appearance at start
Color: grey
Odor: none
Sheen/Free Product: none

Physical appearance at end
Color: grey
Odor: none
Sheen/Free Product: none

NOTES: see page 1

Geologist Signature: JG Captain for JG

9.55

TIME CALIBRATED 0940
4.00 pH
4.49 mS/cm
00 NTU
9.81 mg/L DO

WELL DEVELOPMENT LOG

Well ID: MW26-25

Date	8/20/2020	Field Personnel	J. Goldthwait	Weather	Cloudy-overcast
Site Name	MW26-25	Contractor	Parsons	Project No.	749671
Site Location		Evacuation Method	Waterra		

Well Information:

Depth to Bottom (Initial) *	16.89 ft.	Date(s) Installed	8-24-20	Date(s) Developed	8/28/2020
Depth to Bottom (Final)*	16.89 ft.	Driller	WGC	Development Time	Start: 0815
Depth to Water (Initial)*	8.05 ft.	Well Diameter	2 in.		Stop: 0920
Depth to Water (Final)*	16.35 ft.	Casing Volume	- gal.		Total: 1hr 5min
* Measuring point	TOC	Pump setting* (intake)	bottom, mid-up HYDRO LIFT II		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
0835 Start	~~1~~	18.03	6.05	0.448	993			
0845 1	~~1.8~~	17.40	6.21	0.414	319		8.05	CLOUDY
0855 2	PUMP STOPPED - GENERATOR RAN OUT OF FUEL						11.05	CLOUDY
RESTART								
0900 4	2.8	16.38	6.32	0.425	319			
0910 5	3.35	17.22	6.8	0.420	333		15.8	CLOUDY
6							16.35	CLOUDY
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: 3.35 + 2.8 + 3.4 = 9.55

Physical appearance at start

Color: grey
Odor: none
Sheen/Free Product: none

Physical appearance at end

Color: grey
Odor: none
Sheen/Free Product: none

NOTES:

HORIBA CALIBRATION
3.03 pH
4.50 mS/cm
1.6 NTU
9.20 mg/L DO

See page 1

Geologist Signature: [signature] for JG

WELL DEVELOPMENT LOG

Well ID: MW-26 ~~29~~ 26

Date	6/25/20 & 6/26/20	Field Personnel	A. Code	Weather	70's Sunny
Site Name	Seneca Army Depot	Contractor	NYEC	Project No.	74467.0820
Site Location	SEAD 26	Evacuation Method	Waterra + HDPE tubing		

Well information:

Depth to Bottom (Initial) *	24.45 / 21.91 / 24.6 ft.	Date(s) Installed	6/19/20	Date(s) Developed	6/25/20 & 6/26/20
Depth to Bottom (Final)*	~~24.59~~ 24.71 ft.	Driller	S. Bodem	Development Time	Start: 1130 6/26/20
Depth to Water (Initial)*	16.23 / 16.39 ft.	Well Diameter	2" in.		Stop: 1143 6/26/20
Depth to Water (Final)*	18.59 ft.	Casing Volume	1.33 gal.		Total: ~~0hr 7min~~
* Measuring point	TOC - Marked	Pump setting* (intake)	22.45		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	.1	18.16	7.55	0.714	71000	—	17.20	Brown
1	2	~~18.70~~ 17.78	~~8.720~~	0.720	71000	~~0.25~~	18.43	Brown
2	2.5	16.81	7.33	0.707	71000	~~0.16~~ 0.16	19.60	"
3	3.25	14.52	7.26	0.6856	71000	~~0.20~~ 0.05	21.00	"
4	5	Dry					22.71	"
5	5	19.25	7.55	0.651	71000	—	18.10	Clear
6	0.5	18.67	7.35	~~0.653~~ 0.632	71000	0.1	21.21	"
7	1.8	~~18.09~~ Dry	~~7.63~~		71000		24.1	"
8		Dry						
9	—	17.99	7.76	0.683	71000	—	16.39	Brown
10	0.125	17.92	7.71	0.673	71000	—	17.12	Brown
	1	18.56	7.64	0.684	71000	0.06	18.92	Brown
	2.5	~~18.60~~ 18.56	~~7.64~~ 7.64	0.680	71000	~~0.13~~ 0.06	19.67 16	Brown
	3.25	19.31	7.69	0.689	71000	~~0.16~~ 0.03	19.24	Brown
	4.5	18.69	7.70	0.682	71000	0.08	22.54	Brown
	6.5	18.46	7.58	0.6~~88~~	~~710~~ 589	0.06	22.98	Cloudy
	6.5	19.36	7.67	0.655	27.4	0.06	22.84	mostly Clear Clear
	8	19.29	7.65	0.638	1.0	0.60	22.84	Clear

Development Water Characteristics:

Total volume of Development water removed: 11e

Physical appearance at start		Physical appearance at end	
Color	Brown	Color	Clear
Odor	None	Odor	none
Sheen/Free Product	none	Sheen/Free Product	none

NOTES:

Casing volume = 8.22 (ft) x 0.162 = 1.33 = 1 well volume
1.33 x 5 = 6.65 = 5 well volumes SWL = 10.64
Purged ~17 well volumes

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID: MW-26-27

Date	6/26/20	Field Personnel	A. Cook	Weather	70's Sunny
Site Name	Seneca Army Depot	Contractor	Parsons	Project No.	749674.0800
Site Location	SEAD 26	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	20.64	ft.	Date(s) Installed	6/19/20	Date(s) Developed	6/26/20	
Depth to Bottom (Final)*	20.64	ft.	Driller	MOG - S. Bodoms	Development Time	Start:	-
Depth to Water (Initial)*	14.22	ft.	Well Diameter	2	in.	Stop:	-
Depth to Water (Final)*	16.81	ft.	Casing Volume	-	gal.	Total:	-
* Measuring point	TOC - marked		Pump setting* (intake)	16.64			See note below

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	.1	20.06	5.18	0.748	71000	-	16.16	Brown
1	1.5	19.67	7.77	0.7	71000	0.06	15.81	Brown
2	Dry	-	Dry	-	Dry	-	Dry	-
3	Still dry by 1400, move to next well.							
4								
5								
6								
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: 2.5

Physical appearance at start

Color: Brown
Odor: none
Sheen/Free Product: none

Physical appearance at end

Color: Brown
Odor: none
Sheen/Free Product: none

NOTES: Water column = 6.42 x 0.162 = 1.04 - 1 well volume
1.04 x 5 = 5.2 = 5 well volumes
See Pdd Relayer's development spreadsheet for 5 well vols, other dev. details.

Geologist Signature: E/Coates for AC

Page 1 of 2

WELL DEVELOPMENT LOG

SEAD 26

Well ID: MW 26-27

Date	07/17/20	Field Personnel	CPB	Weather	Cloudy, Hot, Humid
Site Name	Seneca EDD	Contractor	Parsons	Project No.	749674
Site Location	~~[illegible]~~	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	20.01 ft.	Date(s) Installed	6-19-20	Date(s) Developed	07/17/20
Depth to Bottom (Final)*	20.03 ft.	Driller	MEG	Development Time	Start: 1:30
Depth to Water (Initial)*	15.89 ft.	Well Diameter	2" in.	07/20/20	Stop: 2:30
Depth to Water (Final)*	19.98 ft.	Casing Volume	— gal.	Start 8:30 Stop 9:15	Total: 1 hour
* Measuring point	T.O.C.	Pump setting* (intake)	1' off bottom		

Time	Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
1:20	Start	—							Muddy
1:45	1	.25	21.95	7.40	.973	>1,000	0.01667	18.89	Muddy
2:10	2	.50	—	—	—	—	.01667	19.08	
	3		Not enough water for the [illegible]				—		
	4		Well not pumping - lowered intake by 6"						
2:15	5	.75	20.12	7.16	.952	>1000	0.1667	19.98	Muddy
2:30	6	1.00		—	—	—	0.1667		
[illegible]	7								DTB
8:45	8	—	—	—	—	—	—	19.05	20.15
[illegible]	9	—	—	—	—	—	—		
9:15	10	Less than .25 gallons - not enough to take reading						19.47	20.1
		Went back to well in pm to bail remaining water							DTB
								19.91	20.03
		Well bailed dry w/ less than 1/4 gallon removed							
							Final	20.00	20.03
							DTW	at	

Development Water Characteristics:

Total volume of Development water removed: ~~1.00 gal~~ 2.50

Physical appearance at start
- Color: Murky Dark Brown
- Odor: None
- Sheen/Free Product: N/A

Initial Water Column: 20.01 - 15.89 = 4.12'

Physical appearance at end
- Color: Muddy
- Odor: None
- Sheen/Free Product: N/A

NOTES: Well pumping very slowly - set initial intake 1' off bottom. Well pumped dry quickly - lowered intake 6" and got some more water but pumped dry quickly. 07/20 pump set at 1' off bottom - no water. Intake set at 2" off bottom.

Geologist Signature: [signature] / CPB

Well screened at 6.5 - 16.5

See Todd Belanger Well Development Spreadsheet for 5 well volumes and other details

Monitoring Well Development Form

WELL DEVELOPMENT LOG

Well ID: MW-26-285

Date	6/26/20	Field Personnel	A Cook	Weather	70's Sunny
Site Name	Seneca Army Depot	Contractor	Parsons	Project No.	74464.08000
Site Location	SEAD 26	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	20.50	ft.	Date(s) Installed	6/22/20	Date(s) Developed	6/26	
Depth to Bottom (Final)*	20.50	ft.	Driller	MGG S. Burton	Development Time	Start:	1420 6/26
Depth to Water (Initial)*	15.36	ft.	Well Diameter	2"	in.	Stop:	See below
Depth to Water (Final)*	15.51	ft.	Casing Volume	—	gal.	Total:	6
* Measuring point	TOC marked		Pump setting* (intake)	18.50			

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—	22.53	8.08	0.540	71000	—	15.54	Brown
1	1.5	21.63	7.83	0.540	71000	0.1	15.61	Brown
2	2.53	18.55	6.99	0.535	71000	0.12	16.56	Brown
3	5	19.98	7.27	0.533	71000		16.53	Tan
4	7.5	19.19	7.20	0.536	752		15.51	Tan
5								
6								
7								
8								
9								
10								

leave for day 15th

Development Water Characteristics:

Total volume of Development water removed: 7.5 + 6.50 = 14

Physical appearance at start		Physical appearance at end	
Color	Brown	Color	Turbid to clear
Odor	None	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES: Water column: 5.14 x 0.163 = 0.83 = 1 well volume
5 well volumes = 4.16
- see Todd Rolapp's development spreadsheet for 5 well vols and other details

Geologist Signature: E/ Cook for AC

WELL DEVELOPMENT LOG

Well ID: 26-25D

Date	07/16/20	Field Personnel	CPB	Weather	cloudy
Site Name	Seneca 2 OU	Contractor	Parsons	Project No.	748679
Site Location	PRA Well ISCAP 26	Evacuation Method	waterra		

Well information:

Depth to Bottom (Initial) *	20.03 ft.	Date(s) Installed	6-22-20	Date(s) Developed	07/16/20
Depth to Bottom (Final)*	20.03 ft.	Driller	MPG	Development Time	Start: see below
Depth to Water (Initial)*	15.25 ft.	Well Diameter	2" in.		Stop:
Depth to Water (Final)*	15.51 ft.	Casing Volume	- gal.		Total: ✓
* Measuring point	TOC	Pump setting* (intake)	-		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start							15.25	Muddy
1	1.50	10.61	7.36	.620	614	0.100	15.52	
2	2.50	15.12	6.72	.656	97.5	0.062	15.49	
3	4.00	15.00	6.67	.682	40.1	0.160	15.42	
4	5.00	13.59	6.42	1.04	18.3	0.100	15.46	
5	6.50	14.95	6.76	.681	9.2	0.100	15.51	
6								
7								
8								
9								
10								

1.15
1:30
1:45
2:00
2:15
2:30

Development Water Characteristics:

Total volume of Development water removed: 14

Physical appearance at start		Physical appearance at end	
Color	Muddy	Color	Turbid to clear, then to tinted
Odor	None	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES:

Geologist Signature: Ed Acosta for CPB

4D

Well Screen 7' - 17'

See Todd Belanger Well Development Spreadsheet for 3 well volumes

7-24-20
7-22-20

WELL DEVELOPMENT LOG

Well ID: 28D

Date	7-21-20	Field Personnel	JRD	Weather	Sunny 80s
Site Name	SEAD	Contractor	Parsons	Project No.	746679
Site Location	SEAD 26	Evacuation Method	Monsoon - HDPE		

Well information:

Depth to Bottom (Initial) *	~~101.7~~ ft.	Date(s) Installed	7-10-20	Date(s) Developed	7-21, 22, 23, 24/20
Depth to Bottom (Final)*	101.7 ft.	Driller	MPE	Development Time	Start: see below
Depth to Water (Initial)*	13.9 ft.	Well Diameter	2 in.		Stop:
Depth to Water (Final)*	54.9 ft.	Casing Volume	14.048 gal. x 5 =		Total:
* Measuring point	TOC	Pump setting* (intake)	100	70.24 Target Volume	

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
8/21/20 Pump Start								
100 ~~1600~~								
1615	3.5	Stopped for end of Day					28.00	
7/22/20 2								
100 1285							14.80	
1230	6	16.64	9.24	0.646	71000		26.50	Grey
1245	9						39.00	Grey
1300	11.5						44.50	
1315	13.0	17.13	9.15	0.626	71000		48.60	Grey
1330	14.5						53.00	
1345	16.0	17.05	9.17	0.613	71000		55.60	Grey
1400	19.0						62.00	Grey
1415	21.0						63.75	
1430	23.5	19.15	8.95	0.633	71000		64.00	Grey
1445	25.0	Pump stopped					66.00	
7/23/20								
	Pump not working - removed, moved to other well						14.40	
7/24/20 0800							13.95	
0815	27.5						23.00	Dk Gray
0830	32.00						42.05	Dk Gray

Development Water Characteristics:

Total volume of Development water removed: ~~77~~

Physical appearance at start		Physical appearance at end	
Color	Gray	Color	Grey
Odor	None	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES: Screen 50-100'
- see Todd Belanger's development spreadsheet for 5 well vols and other details

Geologist Signature: EJ Addington JRD

WELL DEVELOPMENT LOG

Well ID: 26D

Date	7/24/20	Field Personnel	JRD	Weather	Sunny 80s
Site Name	SEAD	Contractor	Parsons	Project No.	748674
Site Location	SEAD 26	Evacuation Method	Monsoon - HDPE		

Well information:

Depth to Bottom (Initial) *	101.7	ft.	Date(s) Installed	7-10-20	Date(s) Developed	7/21	7/22 7/24
Depth to Bottom (Final)*	101.7	ft.	Driller	MGC	Development Time	Start:	see below
Depth to Water (Initial)*	13.9	ft.	Well Diameter	2"	in.	Stop:	
Depth to Water (Final)*	51.60	ft.	Casing Volume	14.09	gal.	Total:	0
* Measuring point	TOC		Pump setting* (intake)	100			

7/24/20

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
~~0845~~ Start	35						47.40	Gray
0900	38.5	17.49	8.37	0.607	>1000		47.75	Gray
0915	40						48.80	
0930	41.5						48.80	
0945	43						48.75	Gray
1000	44.5						48.50	
1015	46						48.00	Gray
1030	47.5						49.05	
1045	49	20.11	9.00	0.608	>1000		49.80	Gray
1100	50.5						49.70	
1130	52						49.20	
1145	53.5	20.94	8.62	0.577	>1000		49.15	Gray
1200	55						49.20	
1215	56.5						49.30	
1230	57						49.45	Grey
1245	58.5						48.60	
1300	60	19.55	6.33	0.574	>1000		47.60	Grey
1315	61.5							
1330	63						48.70	Grey

Development Water Characteristics:

Total volume of Development water removed: ~~57~~

Physical appearance at start		Physical appearance at end	
Color	Gray	Color	Gray
Odor	None	Odor	none
Sheen/Free Product	None	Sheen/Free Product	None

NOTES:

Screen 50' - 100'

see page 1

Geologist Signature: E/ Ashton for ORD

426 0936

Sheet 3 of 3 MW26-

WELL DEVELOPMENT LOG

Well ID: 28D

Date	7/24/20	Field Personnel	DRD	Weather	Sunny 80s
Site Name	SEAD	Contractor	Parsons	Project No.	749674
Site Location	SEAD 26	Evacuation Method	Monsoon - HDPE		

Well information:

Depth to Bottom (Initial) *	101.7 ft.	Date(s) Installed	7-16-20	Date(s) Developed	7/21 7/22 7/24
Depth to Bottom (Final)*	101.7 ft.	Driller	MEG	Development Time	Start: see below
Depth to Water (Initial)*	13.9 ft.	Well Diameter	2 in.		Stop:
Depth to Water (Final)*	51.00 ft.	Casing Volume	14.09 gal.		Total: 0
* Measuring point	TOC	Pump setting* (intake)	100		

7/24/20

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
1 ~~Start~~	64.5						48.65	
1400	67						48.60	Gray
1415	69						48.95	
1430	71	20.42	8.47	0.563	>1000		49.60	Gray
1445	73						49.80	
1500	75	19.76	8.31	0.563	>1000		50.05	Gray
1515	77	19.85	8.74	0.589	>1000		51.00	Gray
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: 77 gals

Physical appearance at start		Physical appearance at end	
Color	Gray	Color	Gray
Odor	None	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES:

Screen 50 - 100'
see page 1

Geologist Signature: Ed Conkin, Jr
DRD

WELL DEVELOPMENT LOG

Well ID: MW26-20

Date	07/16/20	Field Personnel	CTB	Weather	overcast, slight rain
Site Name	Seaport [illegible]	Contractor	Parsons	Project No.	747674
Site Location	[illegible] (SEAD 26)	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Measured)	20.08 ft.	Date(s) Installed	6-22-20	Date(s) Developed	07/16/20
Depth to Bottom (Planned)	20.00 ft.	Driller	NEG	Development Time	Start: 3:00 PM
Depth to Water (Static)	14.82 ft.	Well Diameter	2 in.		Stop: [illegible]
Depth to Water (Pumping)	[illegible] ft.	Casing Volume	— gal.		Total:
* Measuring point	T.O.C.	Pump setting* (intake)	—		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	—	—				—	14.87	Murky
1	1.00	15.02	6.84	.730	>1,000	0.067	18.15	
2	2.00	15.54	6.80	.758	>1,000	0.052	17.71	
3	3.00	15.92	6.87	.754	>1,000	0.067	18.52	
4		—	[illegible]	[illegible]	[illegible]			
5	3.50	15.98	[illegible]	.742	1,000	0.033	12.97	Murky
6	4.00	[illegible]	[illegible]	.713	347	0.033	16.24	
7	4.50	16.12	[illegible]	.706	[illegible]	0.067	16.94	
8	5.00	16.19	[illegible]	[illegible]	[illegible]	0.033	17.23	
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.033	17.59	
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.033	17.77	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.033	17.93	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.033	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.067	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.067	[illegible]	

Development Water Characteristics:

Total volume of Development water removed: 10

Physical appearance at start

Color: Murky/Grey

Odor: None

Sheen/Free Product: — None

Physical appearance at end

Color: Clear to slightly turbid

Odor: None

Sheen/Free Product: None

NOTES: Well Generator was out of fuel at 3:20 for 10 minutes until refueled. Pump was off for 10 minutes.

Geologist Signature: [signature]

Monitoring Well Development Form

See TOD's Recharge Well Development spreadsheet for 6 well volumes

WELL DEVELOPMENT LOG

Well ID: MW26-30

Date	7/16-7/17	Field Personnel	MCH, CRB	Weather	Cloudy, 80°F
Site Name	Seneca Army Depot	Contractor	Parsons ~~NA~~	Project No.	749674
Site Location	SEAD 26	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	19.0/19.01 ft.	Date(s) Installed	6-23-20	Date(s) Developed	7/16/20, 7/17
Depth to Bottom (Final)*	19.0/18.89 ft.	Driller	NYEG	Development Time	Start: 1235
Depth to Water (Initial)*	13.89/13.85 ft.	Well Diameter	2 in.		Stop: 1335
Depth to Water (Final)*	16.97/17.83 ft.	Casing Volume	0.83 gal.		Total: 1100
* Measuring point	TOC	Pump setting* (intake)	18.0, 16.0		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0.1	17.41	6.35	0.761	367	0.1	14.72	Cloudy
1	1.0	14.41	6.37	0.722	>1000	0.08	16.97	"
~~2~~								
3	0.25	22.56	6.54	0.716	>1000	0.10	14.72	cloudy
4	1.0	18.09	6.58	0.742	388	0.08	15.98	"
5	2.0	16.79	6.35	0.775	>1000	0.08	17.01	"
6	2.75	18.05	6.47	0.801	905	0.06	18.11	"
7	2.75						18.54	
8								
9								DTB
10							14.19	13.11
11	0.25	20.01	8.10	.958	351	0.016	15.27	
12	1.00	18.23	8.14	.992	92.0	0.05	16.32	
13	1.25	16.42	8.45	1.01	58.3	0.016	16.99	
14	1.50	18.39	8.31	1.01	107	0.016	17.76	
15	2.00	21.51	8.52	1.02	220	0.033	18.02	
16	2.25	22.67	9.04	1.03	416.3	@ 0.167	18.03	
17	2.75	23.14	9.09	1.09	6.9	0.033	17.92	19.22

7/20/20 10:30 10:45 10:55 11:00 11:15 11:30

Development Water Characteristics:

Total volume of Development water removed: 3.75 + 2.75 = 6.50

Physical appearance at start		Physical appearance at end	
Color	Cloudy	Color	Cloudy
Odor	~~NA~~ None	Odor	~~NA~~ None
Sheen/Free Product	~~NA~~ None	Sheen/Free Product	~~NA~~ None

7/20/20 - cloudy - No odor - None

AT End clear - No odor - No Sheen

NOTES: Screen = 6' → 16'

5 Well volumes = 4.16

Well pump able at 1 ft. bottom. Pumping very slowly

Geologist Signature: Signature / MCH + CRB

See Todd Belanger Development Spreadsheet for 5x well volume and other details

- Need lock for well MW26-30

WELL DEVELOPMENT LOG

Well ID: MW26-30 (31)

Date	7/17	Field Personnel	CFB MCH	Weather	Sunny, 80°F
Site Name	Seneca Army Depo	Contractor	~~NA~~ Parsons	Project No.	749674
Site Location	SEAD 26	Evacuation Method	Waterra		

Well information:

Depth to Bottom (Initial) *	17.65 ft.	Date(s) Installed	6-23-20	Date(s) Developed	7/17
Depth to Bottom (Final)*	17.69 ft.	Driller	MEC	Development Time	Start: 1410
Depth to Water (Initial)*	12.63 ft.	Well Diameter	2 in.		Stop: 1445
Depth to Water (Final)*	17.46 ft.	Casing Volume	— gal.		Total 0035
* Measuring point	TOC	Pump setting* (intake)	16.65		

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0.1	19.82	6.33	0.874	105	0.10	13.51	Clear
1	0.75	17.37	6.17	0.860	35.1	0.05	16.02	"
2	1.25	18.87	6.17	0.895	50.3	0.03	17.24	"
3	1.25	—	—	—	—	—	17.46	
4								DTB
5							12.74	17.72
6								
7	0.25	19.41	7.91	1.11	11.2	.0167	14.24	
8	0.50	18.94	8.89	1.12	1.4	.0167	15.58	
9	0.75	19.56	8.52	1.13	0.0	.0167	16.39	
10	1.00	18.29	8.32	1.15	0.0	.0167	16.95	
11								
12		well stopped pumping for Horiba			@ 1:30 - not enough water			
								DTB
13	—	22.82	8.93	1.13	13.0	.0167	15.98	17.72
14		—	—	—	—	—	16.98	

Development Water Characteristics:

Total volume of Development water removed: 3.50

Physical appearance at start		Physical appearance at end	
Color	Clear	Color	clear
Odor	~~NA~~ None	Odor	None
Sheen/Free Product	~~NA~~ None	Sheen/Free Product	~~NA~~ None

NOTES: Well Screen 5-15'
5x well volume = 3.1 gallons

Geologist Signature: For Kristen for CFB/MCH

Need well plug for MW 26-31
" lock " " " "

See Table 8 Low Flow Development spreadsheet for 5x well volume

WELL DEVELOPMENT LOG

Well ID: MW 26-31

Date	7-23-20	Field Personnel	Ed. Aschke	Weather	Sunny - 80's F
Site Name	Seneca Army Depot	Contractor	Parsons	Project No.	748574
Site Location	SEAD-26	Evacuation Method	Waterra Hydrotesting		

Well information:

Depth to Bottom (Initial) *	17.65 ft.	Date(s) Installed	6-23-20	Date(s) Developed	7-23-20
Depth to Bottom (Final)*	17.65 ft.	Driller	MEG	Development Time	Start: 0915
Depth to Water (Initial)*	13.00 ft.	Well Diameter	2 in.		Stop: 0948
Depth to Water (Final)*	17.30 ft.	Casing Volume	4.65 gal.		Total: 33 min
* Measuring point	TOC	Pump setting* (intake)	mid Screen		

Time / Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
Start	0	—	—	—	—	—	13.00	—
0915	start pump							
0923 2	0.25	24.18	5.86	0.855	44.5	0.165	13.95	clear slightly cldy
0928 3	0.25 ~~0.25~~	19.38	5.96	0.896	294	0.165	15.05	"
0938 4	1.00	20.69	6.00	0.931	319	0.165	16.40	slightly cldy
0944 5	1.25	19.95	6.08	0.925	749	0.180	17.30	"
0948 6	pump pull well dry			for third time				
7								
8								
9								
10								

Development Water Characteristics:

Total volume of Development water removed: 3.50

Physical appearance at start		Physical appearance at end	
Color	Clear	Color	slightly cldy
Odor	None	Odor	none
Sheen/Free Product	None	Sheen/Free Product	none

NOTES: See Page 1

Geologist Signature: [signature] for CFA/MCH

Sheet 1 of 2 MW26-

WELL DEVELOPMENT LOG

7-23-20

Well ID: 32 RD

Date	7-22-20	Field Personnel	DRD	Weather	Overcast, Rain
Site Name	SEAD 26	Contractor	Parsons	Project No.	749674.05000
Site Location	SEAD 25	Evacuation Method	Monsoon HDPE		

Well information:

Depth to Bottom (Initial) *	80.50 ft.	Date(s) Installed	7-8-20 → 7-9-20	Date(s) Developed	7-22; 23-20
Depth to Bottom (Final)*	80.50 ft.	Driller	MEG	Development Time	Start: –
Depth to Water (Initial)*	9.23 ft.	Well Diameter	2 in.		Stop: –
Depth to Water (Final)*	35.90 ft.	Casing Volume	11.4 gal.	x 5 Volumes	Total: –
* Measuring point	TOC	Pump setting* (intake)	80	= 57 gallons Target	see below

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
7/22/20 Pump set @ 80' Start								
1600	5						28.10	Dk Gray
1615	8	19.05	8.56	0.497	71000		34.25	Dk Gray
7/23/20 3								
0815							9.46'	
0830	12.5						26.80	Gray
0845	14.5	17.17	8.47	0.503	71000		27.40	
0900	18.0						29.50	
0915	20.0						30.10	
0930	22.00	17.07	8.57	0.513	679		30.30	Gray
0945	24.00						30.65	
1000	26.00	16.94	8.30	0.507	629		31.00	Gray
1015	28.00						31.00	
1030	29.50						31.10	
1045	31.00						31.25	
1100	33.00	16.68	8.65	0.503	511		31.70	Gray
1115	35.00						33.00	
1130	36.50	16.35	8.68	0.517	422		34.50	
1145	38.00						34.90	

Development Water Characteristics:

Total volume of Development water removed: 38

Physical appearance at start		Physical appearance at end	
Color	Gray	Color	Lt. Gray
Odor	None	Odor	none
Sheen/Free Product	None	Sheen/Free Product	none

NOTES: - see Todd Belanger's development spreadsheet for well vols and other details

Geologist Signature: Ed Gohta for DRD

WELL DEVELOPMENT LOG

Well ID: 32B

Date	7-23-20	Field Personnel	JFD	Weather	Sunny 80s
Site Name	SEAD	Contractor	Parsons	Project No.	749674.0000
Site Location	SEAD 25	Evacuation Method	Monsoon-HDPE		

Well information:

Depth to Bottom (Initial) *	80.50	ft.	Date(s) Installed	7-8-20 → 7-9-20	Date(s) Developed	7-22 ; 23-20	
Depth to Bottom (Final)*	80.50	ft.	Driller	MAG	Development Time	Start:	
Depth to Water (Initial)*	9.23	ft.	Well Diameter	2	in.	Stop:	
Depth to Water (Final)*	35.80	ft.	Casing Volume	11.4	gal. x 5 = 57 gallons	Total:	see notes below
* Measuring point	TOC		Pump setting* (intake)	80			

7/23/20
80

Well Volumes	Volume of Water Removed (Gallons)	Temperature °C	pH s.u	Conductivity mS/cm	Turbidity (NTU)	Approximate Flow Rate (gal/min)	Depth to Water (ft.)	Appearance of Water
1220 Start	41.50						33.15	Gray
1215	43.0						33.50	
1230	45.0	16.72	8.68	0.512	405		33.80	
1245							33.78	Lt Gray
1300	48.5	17.41	8.67	0.515	363		33.70	
1300	Lightning shutdown							
1430	RE start Pump						14.90	
1445	52.0						26.50	
1500	55.5	16.86	8.83	0.517	309		32.20	
1515	58.0	16.73	8.58	0.497	356		35.90	Gray
10								

Development Water Characteristics:

Total volume of Development water removed: 58

Physical appearance at start		Physical appearance at end	
Color	Gray	Color	Lt Gray
Odor	None	Odor	None
Sheen/Free Product	None	Sheen/Free Product	None

NOTES: see page 1

Geologist Signature: Ed Coats for ARD

APPENDIX F Analytical Data

Table F1 - Fire House, Soil SPLP Leachate Results
Expanded Site Investigation
Seneca Army Depot Activity

						Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
						Loc ID	SBFH-01		SBFH-01		SBFH-02		SBFH-02		SBFH-03	
						Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
						Sample ID	FHESI10001		FHESI10004		FHESI10002		FHESI10005		FHESI10003	
						Sample Depth Interval (FT)	2.5-3		2.5-3		2.5-3		0.167-2		2.5-3	
						Sample Date	8/11/2020		8/11/2020		8/11/2020		8/12/2020		8/11/2020	
						QC Type	SA		DU		SA		SA		SA	
						Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
						Round	3		3		3		3		3	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																
6:2 FTS	NG/L	0			0	5	18	U	18	U	18	U	19	U	19	U
8:2 FTS	NG/L	0			0	5	9.1	U	9.1	U	9	U	9.5	U	9.6	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	5	9.1	U	9.1	U	9	U	9.5	U	9.6	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	5	9.1	U	9.1	U	9	U	9.5	U	9.6	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	1.2	J	SBFH-03	4	5	0.91	U	0.43	J	0.5	J	0.51	J	1.2	J
Perfluorobutyric acid (PFBA)	NG/L	66		SBFH-01	5	5	66		65		0.83	J	8.6		1.4	J
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	5	1.4	U	1.4	U	1.3	U	1.4	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	0			0	5	0.91	U	0.91	U	0.9	U	0.95	U	0.96	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	5	1.4	U	1.4	U	1.3	U	1.4	U	1.4	U
Perfluoroheptanesulfonic acid (PFHpS)	NG/L	0.69	J	SBFH-02	1	5	0.91	U	0.91	U	0.9	U	0.69	J	0.96	U
Perfluoroheptanoic acid (PFHpA)	NG/L	64		SBFH-01	5	5	62		64		0.66	J	4.6		0.96	J
Perfluorohexanesulfonic acid (PFHxS)	NG/L	45		SBFH-02	5	5	17		18		10		45		11	
Perfluorohexanoic acid (PFHxA)	NG/L	39		SBFH-01	5	5	38		39		1.1	J	14		2.6	
Perfluorononanoic acid (PFNA)	NG/L	10		SBFH-01	3	5	9.3		10		1.3	U	0.51	J	1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	1.2	J	SBFH-02	1	5	2.7	U	2.7	U	2.7	U	1.2	J	2.9	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	13		SBFH-02	5	5	7.7		10		4.9		13		2.5	J
Perfluorooctanoic acid (PFOA)	NG/L	170		SBFH-01	5	5	150		170		1.6	J	10		14	
Perfluoropentanoic acid (PFPA)	NG/L	140		SBFH-01	3	5	140		140		1.8	U	5		1.9	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	5	2.7	U	2.7	U	2.7	UJ	2.8	U	2.9	U
Perfluorotridecanoic acid (PFTriA)	NG/L	0			0	5	2.7	U	2.7	U	2.7	U	2.8	U	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	5	1.4	U	1.4	U	1.3	U	1.4	U	1.4	U

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

Table F2 - Fire House, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Num of Detects Above									
Area									FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE
Loc ID									MWFH-01		MWFH-01		MWFH-02		MWFH-02		MWFH-02
Matrix									GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER
Sample ID									FHESI20001		FHESI20013		FHESI20002		FHESI20004		FHESI20016
Sample Date									5/24/2019		3/22/2021		5/24/2019		5/24/2019		3/22/2021
QC Type									SA		SA		SA		DU		SA
Study ID									2019 PFAS ESI		2020 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2020 PFAS ESI
Per- and polyfluoroalkyl substances (PFAS)									Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value Qual
6:2 FTS	NG/L	11,000	J+	MWFH-04	11	32			160		590		7.4	J	6.7	J	15 J
8:2 FTS	NG/L	2,700		MWFH-04	6	32			27		170		9.5	U	9.4	U	9.3 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	32			9.4	U	8.7	U	9.5	U	9.4	U	9.3 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	32			4	J	8.7	U	9.5	U	9.4	U	9.3 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	110		MWFH-04	13	32			24		56		5.1		4.8		6.7
Perfluorobutyric acid (PFBA)	NG/L	1,300		MWFH-04	22	32			75		160		12		11	J-	20
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	32			1.4	U	1.3	U	1.4	U	1.4	U	1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	32			0.5	J	0.87	U	0.95	U	0.94	U	0.93 U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	32			1.4	U	1.3	U	1.4	U	1.4	U	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	120		MWFH-04	8	32			4.7		0.87	U	0.35	J	0.94	U	0.83 J
Perfluoroheptanoic acid (PFHpA)	NG/L	2,800		MWFH-04	16	32			99		240		15		16		28
Perfluorohexanesulfonic acid (PFHxS)	NG/L	3,000		MWFH-04	25	32			300	J	610		40		37		80
Perfluorohexanoic acid (PFHxA)	NG/L	3,400		MWFH-04	19	32			280	J	710		35		32		48
Perfluorononanoic acid (PFNA)	NG/L	380		MWFH-04	9	32			7.5		1.3	U	1.4	U	1.4	U	1 J
Perfluorooctane Sulfonamide (FOSA)	NG/L	150		MWFH-04	3	32			8.3		2.6	U	2.8	U	2.8	U	1.8 J
Perfluorooctanesulfonic acid (PFOS)	NG/L	7,700		MWFH-04	16	32	10	9	220		790		7.4		6.3		53
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	27	32	10	13	210	J	960		23		22		41
Perfluoropentanoic acid (PFPA)	NG/L	5,700		MWFH-04	20	32			240		650		37		37		48
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	32			2.8	U	2.6	U	2.8	U	2.8	U	2.8 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	32			2.8	U	2.6	U	2.8	U	2.8	U	2.8 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	32			1.4	U	1.3	UJ	1.4	U	1.4	U	1.4 U
PFOS + PFOA Summation	NG/L	5,900	J	MWFH-04	15	16			430	J			30.4		28.3		

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding rejected
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for details.
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if
U = non-detect, i.e. not detected at or above this value.
J- = The result is an estimated quantity, but the result may be biased low.
J+ = The result is an estimated quantity, but the result may be biased high.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action Levels, or represented in this table.
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.
- Bold Outline values represent a results that is above New York State Maximum ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the provided
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F2 - Fire House, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Num of Detects Above	Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
									Loc ID	MWFH-03		MWFH-03		MWFH-04	
									Matrix	GROUNDWATER		GROUNDWATER		GROUNDWATER	
									Sample ID	FHESI20003		FHESI20019		FHESI20005	
									Sample Date	10/16/2019		3/22/2021		10/16/2019	
									QC Type	SA		SA		SA	
									Study ID	2019 PFAS ESI		2020 PFAS ESI		2019 PFAS ESI	
										Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)															
6:2 FTS	NG/L	11,000	J+	MWFH-04	11	32				19	U	19	U	5,000	
8:2 FTS	NG/L	2,700		MWFH-04	6	32				9.7	U	9.5	U	1,900	J
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	32				9.7	U	9.5	U	980	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	32				9.7	U	9.5	U	980	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	110		MWFH-04	13	32				0.97	U	26		53	J
Perfluorobutyric acid (PFBA)	NG/L	1,300		MWFH-04	22	32				27		45		350	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	32				1.5	U	1.4	U	150	U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	32				0.97	U	0.95	U	98	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	32				1.5	U	1.4	U	150	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	120		MWFH-04	8	32				0.97	U	0.95	U	39	J
Perfluoroheptanoic acid (PFHpA)	NG/L	2,800		MWFH-04	16	32				1	J	41		630	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	3,000		MWFH-04	25	32				0.94	J	150		1,200	
Perfluorohexanoic acid (PFHxA)	NG/L	3,400		MWFH-04	19	32				10		130		920	
Perfluorononanoic acid (PFNA)	NG/L	380		MWFH-04	9	32				1.5	U	1.4	U	150	J
Perfluorooctane Sulfonamide (FOSA)	NG/L	150		MWFH-04	3	32				2.9	U	2.8	U	290	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	7,700		MWFH-04	16	32	10	9		2.9	U	1.7	J	3,800	J+
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	27	32	10	13		2.3		64		1,300	J+
Perfluoropentanoic acid (PFPA)	NG/L	5,700		MWFH-04	20	32				20		90		1,200	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	32				2.9	U	2.8	U	290	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	32				2.9	U	2.8	U	290	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	32				1.5	U	1.4	U	150	U
PFOS + PFOA Summation	NG/L	5,900	J	MWFH-04	15	16				5.2				5,100	J

Parameter	Unit	Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
		Loc ID	MWFH-04		MWFH-04		MWFH-04	
		Matrix	GROUNDWATER		GROUNDWATER		GROUNDWATER	
		Sample ID	FHESI20007		FHESI20020			
		Sample Date	10/16/2019		3/22/2021			
		QC Type	DU		SA			
		Study ID	2019 PFAS ESI		2020 PFAS ESI			
			Value	Qual	Value	Qual		
Per- and polyfluoroalkyl substances (PFAS)								
6:2 FTS	NG/L		6,200		11,000	J+		
8:2 FTS	NG/L		2,100		2,700			
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L		1,000	U	9.5	U		
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L		1,000	U	9.5	U		
Perfluorobutanesulfonic acid (PFBS)	NG/L		55	J	110			
Perfluorobutyric acid (PFBA)	NG/L		340		1,300			
Perfluorodecanesulfonic acid (PFDS)	NG/L		150	U	1.4	U		
Perfluorodecanoic acid (PFDA)	NG/L		100	U	0.95	U		
Perfluorododecanoic acid (PFDoA)	NG/L		150	U	1.4	U		
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L		48	J	120			
Perfluoroheptanoic acid (PFHpA)	NG/L		630		2,800			
Perfluorohexanesulfonic acid (PFHxS)	NG/L		1,200		3,000			
Perfluorohexanoic acid (PFHxA)	NG/L		980		3,400			
Perfluorononanoic acid (PFNA)	NG/L		140	J	380			
Perfluorooctane Sulfonamide (FOSA)	NG/L		300	U	150			
Perfluorooctanesulfonic acid (PFOS)	NG/L		4,600	J+	7,700			
Perfluorooctanoic acid (PFOA)	NG/L		1,300	J+	3,900			
Perfluoropentanoic acid (PFPA)	NG/L		1,200		5,700			
Perfluorotetradecanoic acid (PFTeA)	NG/L		300	U	2.8	U		
Perfluorotridecanoic Acid (PFTriA)	NG/L		300	U	2.8	U		
Perfluoroundecanoic acid (PFUnA)	NG/L		150	U	1.4	U		
PFOS + PFOA Summation	NG/L		5,900	J				

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding rejected
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
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J- = The result is an estimated quantity, but the result may be biased low.
J+ = The result is an estimated quantity, but the result may be biased high.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action Levels, or represented in this table.
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.
- Bold Outline values represent a results that is above New York State Maximum ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the provided
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F2 - Fire House, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Num of Detects Above	Area	FIRE HOUSE	FIRE HOUSE	FIRE HOUSE	FIRE HOUSE	FIRE HOUSE
									Loc ID	MWFH-05	MWFH-05	MWFH-06	MWFH-06	MWFH-07
									Matrix	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER
									Sample ID	FHESI20006	FHESI20021	FHESI20008	FHESI20022	FHESI20009
									Sample Date	10/18/2019	3/22/2021	6/29/2020	3/19/2021	6/29/2020
									QC Type	SA	SA	SA	SA	SA
									Study ID	2019 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	11,000	J+	MWFH-04	11	32				260 J	18 U	19 U	18 U	18 U
8:2 FTS	NG/L	2,700		MWFH-04	6	32				190 U	9.2 U	9.5 U	9.2 U	9 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	32				190 U	9.2 U	9.5 U	9.2 U	9 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	32				190 U	9.2 U	9.5 U	9.2 U	9 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	110		MWFH-04	13	32				87	58 J-	0.95 U	0.92 U	0.9 U
Perfluorobutyric acid (PFBA)	NG/L	1,300		MWFH-04	22	32				260	150	1.4 U	2.1	4.8 J
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	32				29 U	1.4 U	1.4 U	1.4 U	1.3 U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	32				19 U	0.92 UJ	0.95 U	0.92 U	0.9 U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	32				29 U	1.4 U	1.4 U	1.4 U	1.3 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	120		MWFH-04	8	32				16 J	0.92 U	0.95 U	0.92 U	0.9 U
Perfluoroheptanoic acid (PFHpA)	NG/L	2,800		MWFH-04	16	32				510	180	1.4 U	1.4 U	1.3 U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	3,000		MWFH-04	25	32				1,800	610	1.9 U	0.61 J	1.8 U
Perfluorohexanoic acid (PFHxA)	NG/L	3,400		MWFH-04	19	32				820	360	1.9 U	0.92 U	0.9 U
Perfluorononanoic acid (PFNA)	NG/L	380		MWFH-04	9	32				42	1.4 U	1.4 U	1.4 U	1.3 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	150		MWFH-04	3	32				58 U	2.8 U	2.8 U	2.8 U	2.7 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	7,700		MWFH-04	16	32	10	9		440 J+	2.8 U	2.8 U	2.8 U	2.7 U
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	27	32	10	13		4,100 J+	1,100	0.66 J	1.4 U	0.65 J
Perfluoropentanoic acid (PFPA)	NG/L	5,700		MWFH-04	20	32				860	390	1.6 J	0.92 U	0.9 U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	32				58 U	2.8 U	2.8 U	2.8 U	2.7 UJ
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	32				58 U	2.8 U	2.8 U	2.8 U	2.7 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	32				29 U	1.4 U	1.4 U	1.4 U	1.3 U
PFOS + PFOA Summation	NG/L	5,900	J	MWFH-04	15	16				4,540 J		3.46 J		3.35 J

Footnote:
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3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for details.
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if
U = non-detect, i.e. not detected at or above this value.
J- = The result is an estimated quantity, but the result may be biased low.
J+ = The result is an estimated quantity, but the result may be biased high.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action Levels, or represented in this table.
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.
- Bold Outline values represent a results that is above New York State Maximum ####

10) Criteria action level source document and web address.
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https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F2 - Fire House, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Num of Detects Above	Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
									Loc ID	MWFH-07		MWFH-07		MWFH-08	
									Matrix	GROUNDWATER		GROUNDWATER		GROUNDWATER	
									Sample ID	FHESI20010		FHESI20023		FHESI20011	
									Sample Date	6/29/2020		3/19/2021		6/29/2020	
									QC Type	DU		SA		SA	
									Study ID	2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI	
										Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)															
6:2 FTS	NG/L	11,000	J+	MWFH-04	11	32				18	U	18	U	19	U
8:2 FTS	NG/L	2,700		MWFH-04	6	32				9	U	8.9	U	9.4	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	32				9	U	8.9	U	9.4	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	32				9	U	8.9	U	9.4	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	110		MWFH-04	13	32				0.9	U	0.89	U	0.94	U
Perfluorobutyric acid (PFBA)	NG/L	1,300		MWFH-04	22	32				2.9	J	0.93	J	2.6	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	32				1.3	U	1.3	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	32				0.9	U	0.89	U	0.94	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	32				1.3	U	1.3	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	120		MWFH-04	8	32				0.9	U	0.89	U	0.94	U
Perfluoroheptanoic acid (PFHpA)	NG/L	2,800		MWFH-04	16	32				1.3	U	1.3	U	1.4	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	3,000		MWFH-04	25	32				1.8	U	1.1	J	1.9	U
Perfluorohexanoic acid (PFHxA)	NG/L	3,400		MWFH-04	19	32				0.9	U	0.89	U	0.94	U
Perfluorononanoic acid (PFNA)	NG/L	380		MWFH-04	9	32				1.3	U	1.3	U	1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	150		MWFH-04	3	32				2.7	U	2.7	U	2.8	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	7,700		MWFH-04	16	32	10	9		2.7	U	2.7	U	3.7	U
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	27	32	10	13		0.67	J	0.59	J	0.77	J
Perfluoropentanoic acid (PFPA)	NG/L	5,700		MWFH-04	20	32				0.9	U	0.89	U	0.94	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	32				2.7	U	2.7	U	2.8	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	32				2.7	U	2.7	U	2.8	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	32				1.3	U	1.3	U	1.4	U
PFOS + PFOA Summation	NG/L	5,900	J	MWFH-04	15	16				3.37	J			4.47	J

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Num of Detects Above	Area	FIRE HOUSE		FIRE HOUSE	
									Loc ID	MWFH-08		MWFH-09	
									Matrix	GROUNDWATER		GROUNDWATER	
									Sample ID	FHESI20024		FHESI20012	
									Sample Date	3/19/2021		9/14/2020	
									QC Type	SA		SA	
									Study ID	2020 PFAS ESI		2020 PFAS ESI	
										Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)													
6:2 FTS	NG/L	11,000	J+	MWFH-04	11	32				18	U	250	
8:2 FTS	NG/L	2,700		MWFH-04	6	32				8.9	U	86	
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	32				8.9	U	8.8	UJ
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	32				8.9	U	8.8	UJ
Perfluorobutanesulfonic acid (PFBS)	NG/L	110		MWFH-04	13	32				0.89	U	2	
Perfluorobutyric acid (PFBA)	NG/L	1,300		MWFH-04	22	32				1.3	J	96	J-
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	32				1.4	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	32				0.89	U	0.52	J
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	32				1.4	U	1.3	UJ
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	120		MWFH-04	8	32				0.89	U	1.3	J
Perfluoroheptanoic acid (PFHpA)	NG/L	2,800		MWFH-04	16	32				1.4	U	23	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	3,000		MWFH-04	25	32				3.3		26	
Perfluorohexanoic acid (PFHxA)	NG/L	3,400		MWFH-04	19	32				0.89	U	90	
Perfluorononanoic acid (PFNA)	NG/L	380		MWFH-04	9	32				1.3	U	5.5	
Perfluorooctane Sulfonamide (FOSA)	NG/L	150		MWFH-04	3	32				2.7	U	2.6	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	7,700		MWFH-04	16	32	10	9		2.7	U	65	
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	27	32	10	13		0.51	J	41	
Perfluoropentanoic acid (PFPA)	NG/L	5,700		MWFH-04	20	32				0.89	U	170	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	32				2.7	U	2.6	UJ
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	32				2.7	U	2.6	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	32				1.3	U	1.3	U
PFOS + PFOA Summation	NG/L	5,900	J	MWFH-04	15	16						106	

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Table F2 - Fire House, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Num of Detects Above	Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
									Loc ID	MWFH-09		MWFH-10D-DN		MWFH-10D-DN		MWFH-10D-DN		MWFH-10D-UP	
									Matrix	GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
									Sample ID	FHESI20025		FHESI20015		FHESI20027-DN		FHESI20029		FHESI20027-UP	
									Sample Date	3/22/2021		9/1/2020		3/26/2021		3/26/2021		4/2/2021	
									QC Type	SA		SA		SA		DU		SA	
									Study ID	2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI	
										Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																			
6:2 FTS	NG/L	11,000	J+	MWFH-04	11	32				2,200		17	U	19	U	19	U	17	U
8:2 FTS	NG/L	2,700		MWFH-04	6	32				9.2	U	8.4	U	9.3	U	9.3	U	8.7	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	32				9.2	U	8.4	U	9.3	U	9.3	U	8.7	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	32				9.2	U	8.4	U	9.3	U	9.3	U	8.7	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	110		MWFH-04	13	32				30		0.84	U	0.93	U	0.93	U	0.87	U
Perfluorobutyric acid (PFBA)	NG/L	1,300		MWFH-04	22	32				230		4		1.4	U	1.4	U	1.3	U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	32				1.4	U	1.3	U	1.4	U	1.4	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	32				0.92	U	0.84	U	0.93	U	0.93	U	0.87	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	32				1.4	U	1.3	U	1.4	U	1.4	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	120		MWFH-04	8	32				0.92	U	0.84	U	0.93	U	0.93	U	0.87	U
Perfluoroheptanoic acid (PFHpA)	NG/L	2,800		MWFH-04	16	32				330		0.63	J	1.4	U	1.4	U	1.3	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	3,000		MWFH-04	25	32				280		3.2		1.1	J	0.96	J	0.8	J
Perfluorohexanoic acid (PFHxA)	NG/L	3,400		MWFH-04	19	32				560		4		1.2	J	1	J	0.87	U
Perfluorononanoic acid (PFNA)	NG/L	380		MWFH-04	9	32				1.4	U	0.67	J	1.4	U	1.4	U	1.3	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	150		MWFH-04	3	32				2.8	U	2.5	U	2.8	U	2.8	U	2.6	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	7,700		MWFH-04	16	32	10	9		170		6.6	JN	3.4	J	3	J	1.8	J
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	27	32	10	13		510		1.7		1.1	J	0.95	J	0.6	J
Perfluoropentanoic acid (PFPA)	NG/L	5,700		MWFH-04	20	32				810		2.6		1.1	J	1	J	0.87	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	32				2.8	U	2.5	UJ	2.8	U	2.8	U	2.6	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	32				2.8	U	2.5	U	2.8	U	2.8	U	2.6	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	32				1.4	U	1.3	U	1.4	U	1.4	U	1.3	U
PFOS + PFOA Summation	NG/L	5,900	J	MWFH-04	15	16						8.3							

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Table F2 - Fire House, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Num of Detects Above	Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
									Loc ID	MWFH-11		MWFH-11		MWFH-9D-DN	
									Matrix	GROUNDWATER		GROUNDWATER		GROUNDWATER	
									Sample ID	FHESI20017		FHESI20028		FHESI20014	
									Sample Date	9/14/2020		3/19/2021		8/24/2020	
									QC Type	SA		SA		SA	
									Study ID	2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI	
										Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)															
6:2 FTS	NG/L	11,000	J+	MWFH-04	11	32				18	U	19	U	17	U
8:2 FTS	NG/L	2,700		MWFH-04	6	32				9.1	U	9.6	U	8.7	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	32				9.1	U	9.6	U	8.7	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	32				9.1	U	9.6	U	8.7	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	110		MWFH-04	13	32				0.91	U	0.96	U	0.87	U
Perfluorobutyric acid (PFBA)	NG/L	1,300		MWFH-04	22	32				1.4	U	2.1		1.3	U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	32				1.4	U	1.4	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	32				0.91	U	0.96	U	0.87	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	32				1.4	U	1.4	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	120		MWFH-04	8	32				0.91	U	0.96	U	0.87	U
Perfluoroheptanoic acid (PFHpA)	NG/L	2,800		MWFH-04	16	32				0.72	J	1.4	U	1.3	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	3,000		MWFH-04	25	32				0.4	J	0.96	U	0.34	J
Perfluorohexanoic acid (PFHxA)	NG/L	3,400		MWFH-04	19	32				4.1		0.66	J	0.87	U
Perfluorononanoic acid (PFNA)	NG/L	380		MWFH-04	9	32				1.4	U	1.4	U	1.3	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	150		MWFH-04	3	32				2.7	U	2.9	U	2.6	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	7,700		MWFH-04	16	32	10	9		2.7	U	2.9	U	2.6	U
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	27	32	10	13		1.8	U	0.54	J	0.54	J
Perfluoropentanoic acid (PFPA)	NG/L	5,700		MWFH-04	20	32				3.9		0.85	J	1.7	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	32				2.7	U	2.9	U	2.6	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	32				2.7	U	2.9	U	2.6	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	32				1.4	U	1.4	U	1.3	U
PFOS + PFOA Summation	NG/L	5,900	J	MWFH-04	15	16				4.5	U			3.14	J

Parameter	Unit	Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
		Loc ID	MWFH-9D-DN		MWFH-9D-DN		MWFH-9D-DN	
		Matrix	GROUNDWATER		GROUNDWATER		GROUNDWATER	
		Sample ID	FHESI20018		FHESI20026-DN			
		Sample Date	8/24/2020		3/29/2021			
		QC Type	DU		SA			
		Study ID	2020 PFAS ESI		2020 PFAS ESI			
			Value	Qual	Value	Qual		
Per- and polyfluoroalkyl substances (PFAS)								
6:2 FTS	NG/L		18	U	18	U		
8:2 FTS	NG/L		8.8	U	9	U		
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L		8.8	U	9	U		
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L		8.8	U	9	U		
Perfluorobutanesulfonic acid (PFBS)	NG/L		0.88	U	0.9	U		
Perfluorobutyric acid (PFBA)	NG/L		1.3	U	1.3	U		
Perfluorodecanesulfonic acid (PFDS)	NG/L		1.3	U	1.3	U		
Perfluorodecanoic acid (PFDA)	NG/L		0.88	U	0.9	U		
Perfluorododecanoic acid (PFDoA)	NG/L		1.3	U	1.3	U		
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L		0.88	U	0.9	U		
Perfluoroheptanoic acid (PFHpA)	NG/L		1.3	U	1.3	U		
Perfluorohexanesulfonic acid (PFHxS)	NG/L		0.88	U	0.63	J		
Perfluorohexanoic acid (PFHxA)	NG/L		0.88	U	1.8	U		
Perfluorononanoic acid (PFNA)	NG/L		1.3	U	0.47	J		
Perfluorooctane Sulfonamide (FOSA)	NG/L		2.7	U	2.7	U		
Perfluorooctanesulfonic acid (PFOS)	NG/L		2.7	U	2.7	U		
Perfluorooctanoic acid (PFOA)	NG/L		0.5	J	1.3	U		
Perfluoropentanoic acid (PFPA)	NG/L		1.8	U	0.9	U		
Perfluorotetradecanoic acid (PFTeA)	NG/L		2.7	U	2.7	U		
Perfluorotridecanoic Acid (PFTriA)	NG/L		2.7	U	2.7	U		
Perfluoroundecanoic acid (PFUnA)	NG/L		1.3	U	1.3	U		
PFOS + PFOA Summation	NG/L		3.2	J				

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding rejected
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for details.
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if
U = non-detect, i.e. not detected at or above this value.
J- = The result is an estimated quantity, but the result may be biased low.
J+ = The result is an estimated quantity, but the result may be biased high.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action Levels, or represented in this table.
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.
- Bold Outline values represent a results that is above New York State Maximum ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the provided https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F2 - Fire House, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

								Area	FIRE HOUSE	FIRE HOUSE
								Loc ID	MWFH-9D-UP	MWFH-9D-UP
								Matrix	GROUNDWATER	GROUNDWATER
								Sample ID	FHESI20026-UP	FHESI20030
								Sample Date	3/29/2021	3/29/2021
								QC Type	SA	DU
								Study ID	2020 PFAS ESI	2020 PFAS ESI
Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Num of Detects Above	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)										
6:2 FTS	NG/L	11,000	J+	MWFH-04	11	32			19 U	19 U
8:2 FTS	NG/L	2,700		MWFH-04	6	32			9.5 U	9.4 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	32			9.5 U	9.4 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	32			9.5 U	9.4 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	110		MWFH-04	13	32			0.95 U	0.94 U
Perfluorobutyric acid (PFBA)	NG/L	1,300		MWFH-04	22	32			1.4 U	1.4 U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	32			1.4 U	1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	32			0.95 U	0.94 U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	32			1.4 U	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	120		MWFH-04	8	32			0.95 U	0.94 U
Perfluoroheptanoic acid (PFHpA)	NG/L	2,800		MWFH-04	16	32			1.4 U	1.4 U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	3,000		MWFH-04	25	32			0.43 J	0.94 U
Perfluorohexanoic acid (PFHxA)	NG/L	3,400		MWFH-04	19	32			1.9 U	1.9 U
Perfluorononanoic acid (PFNA)	NG/L	380		MWFH-04	9	32			1.4 U	1.4 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	150		MWFH-04	3	32			2.8 U	2.8 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	7,700		MWFH-04	16	32	10	9	2.8 U	2.8 U
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	27	32	10	13	1.4 U	1.4 U
Perfluoropentanoic acid (PFPA)	NG/L	5,700		MWFH-04	20	32			0.95 U	0.94 U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	32			2.8 U	2.8 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	32			2.8 U	2.8 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	32			1.4 U	1.4 U
PFOS + PFOA Summation	NG/L	5,900	J	MWFH-04	15	16				

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding rejected
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for details.
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if
U = non-detect, i.e. not detected at or above this value.
J- = The result is an estimated quantity, but the result may be biased low.
J+ = The result is an estimated quantity, but the result may be biased high.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action Levels, or represented in this table.
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.
- Bold Outline values represent a results that is above New York State Maximum ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the provided
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F3 - Fire House, Surface Water Results
Expanded Site Investigation
Seneca Army Depot Activity

									Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
									Loc ID	SWFH-01		SWFH-01		SWFH-02		SWFH-02	
									Matrix	SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
									Sample ID	FHESI30001		FHESI30004		FHESI30002		FHESI30005	
									Sample Date	8/25/2020		3/31/2021		8/25/2020		3/24/2021	
									QC Type	SA		SA		SA		SA	
									Study ID	2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI	
									Sample Round	3		4		3		4	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Num of Detects**	**Num of Analyses**	**Action Level**	**Num of Detects Above**		Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																	
6:2 FTS	NG/L	0			0	6				19	U	19	U	18	U	19	UJ
8:2 FTS	NG/L	3.9	J	SWFH-03	1	6				9.6	U	9.4	U	9	U	9.4	UJ
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	6				9.6	U	9.4	U	9	U	9.4	UJ
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	6				9.6	U	9.4	U	9	U	9.4	UJ
Perfluorobutanesulfonic acid (PFBS)	NG/L	0			0	6				0.96	U	0.94	U	0.9	U	0.94	UJ
Perfluorobutyric acid (PFBA)	NG/L	51		SWFH-01	3	6				1.4	UJ	51		2.3	J-	1.4	UJ
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	6				1.4	U	1.4	U	1.4	U	1.4	UJ
Perfluorodecanoic acid (PFDA)	NG/L	1.1	J	SWFH-03	2	6				0.96	U	0.94	U	0.72	J	0.94	UJ
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	6				1.4	U	1.4	U	1.4	U	1.4	UJ
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	0			0	6				0.96	U	0.94	U	0.9	U	0.94	UJ
Perfluoroheptanoic acid (PFHpA)	NG/L	6	J+	SWFH-03	5	6				3.7		1.9		2.5		1.4	UJ
Perfluorohexanesulfonic acid (PFHxS)	NG/L	5.9		SWFH-01	5	6				5.9		1.7	J	2.7		0.94	UJ
Perfluorohexanoic acid (PFHxA)	NG/L	6.4	J+	SWFH-03	5	6				5.9		1.9	U	2.9		1.8	J
Perfluorononanoic acid (PFNA)	NG/L	3.8	J+	SWFH-03	5	6				1.5	J	0.96	J	1.4	J	1.4	UJ
Perfluorooctane Sulfonamide (FOSA)	NG/L	0			0	6				2.9	U	2.8	U	2.7	U	2.8	UJ
Perfluorooctanesulfonic acid (PFOS)	NG/L	27	J+	SWFH-03	6	6	10	2		9.6		6.4		6.6		2.1	J
Perfluorooctanoic acid (PFOA)	NG/L	8.4		SWFH-01	6	6	10	0		8.4		3.7	J	3.8		1.5	J
Perfluoropentanoic acid (PFPA)	NG/L	11	J+	SWFH-03	2	6				9.6	U	0.94	U	5.5		0.94	UJ
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	6				2.9	UJ	2.8	U	2.7	U	2.8	UJ
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	6				2.9	U	2.8	U	2.7	U	2.8	UJ
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	6				1.4	U	1.4	U	1.4	U	1.4	UJ
PFOS + PFOA Summation	NG/L	20.4		SWFH-03	3	3				18				10.4			

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding rejected
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if
U = non-detect, i.e. not detected at or above this value. J- = The result is an estimated quantity,
J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not detected:
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria
- Bold Outline values represent a results that is above New York State Maximum Contaminant ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F3 - Fire House, Surface Water Results
Expanded Site Investigation
Seneca Army Depot Activity

								Area	FIRE HOUSE		FIRE HOUSE	
								Loc ID	SWFH-03		SWFH-03	
								Matrix	SURFACE WATER		SURFACE WATER	
								Sample ID	FHESI30003		FHESI30006	
								Sample Date	8/27/2020		3/24/2021	
								QC Type	SA		SA	
								Study ID	2020 PFAS ESI		2020 PFAS ESI	
								Sample Round	3		4	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Num of Detects**	**Num of Analyses**	**Action Level**	**Num of Detects Above**	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)												
6:2 FTS	NG/L	0			0	6			18	U	18	U
8:2 FTS	NG/L	3.9	J	SWFH-03	1	6			3.9	J	9	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	6			9.1	U	9	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	6			9.1	U	9	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	0			0	6			0.91	U	0.9	U
Perfluorobutyric acid (PFBA)	NG/L	51		SWFH-01	3	6			9.9	J-	1.4	U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	6			1.4	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	1.1	J	SWFH-03	2	6			1.1	J	0.9	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	6			1.4	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	0			0	6			0.91	U	0.9	U
Perfluoroheptanoic acid (PFHpA)	NG/L	6	J+	SWFH-03	5	6			1.9		6	J+
Perfluorohexanesulfonic acid (PFHxS)	NG/L	5.9		SWFH-01	5	6			5.7		2.1	J+
Perfluorohexanoic acid (PFHxA)	NG/L	6.4	J+	SWFH-03	5	6			4.2		6.4	J+
Perfluorononanoic acid (PFNA)	NG/L	3.8	J+	SWFH-03	5	6			1.4	J	3.8	J+
Perfluorooctane Sulfonamide (FOSA)	NG/L	0			0	6			2.7	U	2.7	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	27	J+	SWFH-03	6	6	10	2	18		27	J+
Perfluorooctanoic acid (PFOA)	NG/L	8.4		SWFH-01	6	6	10	0	2.4		7.5	J+
Perfluoropentanoic acid (PFPA)	NG/L	11	J+	SWFH-03	2	6			0.91	UJ	11	J+
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	6			2.7	U	2.7	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	6			2.7	U	2.7	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	6			1.4	U	1.4	U
PFOS + PFOA Summation	NG/L	20.4		SWFH-03	3	3			20.4			

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding rejected
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if
U = non-detect, i.e. not detected at or above this value. J- = The result is an estimated quantity,
J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not detected:
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria
- Bold Outline values represent a results that is above New York State Maximum Contaminant ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F4 - SEAD-25, Soil SPLP Leachate Results
Expanded Site Investigation
Seneca Army Depot Activity

						Area	SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
						Loc ID	SB25-17		SB25-18		SB25-18		SB25-18		SB25-19		SB25-19	
						Matrix	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
						Sample ID	25ESI10001		25ESI10005		25ESI10006		25ESI10002		25ESI10004		25ESI10003	
						Sample Depth Interval (FT)	2.5-3		0.167-2		0.167-2		2.5-3		0.167-1.917		2.5-3	
						Sample Date	8/12/2020		8/12/2020		8/12/2020		8/12/2020		8/12/2020		8/12/2020	
						QC Type	SA		SA		DU		SA		SA		SA	
						Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
						Sample Round	3		3		3		3		3		3	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																		
6:2 FTS	NG/L	0			0	6	19	U	19	U	19	U	19	U	19	U	20	U
8:2 FTS	NG/L	0			0	6	9.7	U	9.7	U	9.3	U	9.4	U	9.7	U	9.8	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	6	9.7	U	9.7	U	9.3	U	9.4	U	9.7	U	9.8	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	6	9.7	U	9.7	U	9.3	U	9.4	U	9.7	U	9.8	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	13		SB25-18	6	6	12		11		13		5.7		5.9		11	
Perfluorobutyric acid (PFBA)	NG/L	26		SB25-18	6	6	15		25		26		5.8		1.9		9.6	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	6	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.5	U
Perfluorodecanoic acid (PFDA)	NG/L	62		SB25-18	6	6	17		19		22		62		1	J	2.5	
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	6	1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.5	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	28		SB25-18	6	6	6.7		26		28		18		3.7		7.8	
Perfluoroheptanoic acid (PFHpA)	NG/L	21		SB25-19	6	6	5.8		9.5		11		5.7		4.6		21	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	680		SB25-18	6	6	250		580		680		480		330		620	
Perfluorohexanoic acid (PFHxA)	NG/L	150		SB25-19	6	6	34		80		88		41		26		150	
Perfluorononanoic acid (PFNA)	NG/L	8.6		SB25-18	6	6	7		6.8		8.6		8.4		1.8	J	6.7	
Perfluorooctane Sulfonamide (FOSA)	NG/L	170		SB25-18	6	6	7.1		170		160		17		2.2	J	18	
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,400		SB25-18	6	6	920		1,800		2,000		2,400		120		270	
Perfluorooctanoic acid (PFOA)	NG/L	1,100		SB25-19	6	6	450		460		580		420		340		1,100	
Perfluoropentanoic acid (PFPA)	NG/L	37		SB25-18	6	6	26		36		37		11		4.5		21	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	6	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	6	2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0.71	J	SB25-18	1	6	1.5	U	1.4	U	1.4	U	0.71	J	1.5	U	1.5	U

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25
									Loc ID	MW25-1	MW25-1	MW25-10	MW25-10	MW25-10
									Matrix	GW	GW	GW	GW	GW
									Sample ID	25SI20001	25ESI20024	25SI20007	25SI20014	25ESI20030
									Sample Date	4/12/2017	3/23/2021	4/12/2017	4/12/2017	3/25/2021
									QC Type	SA	SA	SA	DU	SA
									Study ID	PFAS GW Event 2017-04	2020 PFAS ESI	PFAS GW Event 2017-04	PFAS GW Event 2017-04	2020 PFAS ESI
									Sample Round		4			4
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	20	J	MW25-34D	2	57					5,000 U			19 U
8:2 FTS	NG/L	0			0	57					2,500 U			9.3 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				14 U	2,500 U	14 U	13 U	9.3 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				14 U	2,500 U	14 U	13 U	9.3 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71				380	960 J+	210	200	540
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57					420 J			53
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57					380 U			1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71				2.8	250 U	0.76 J	0.81 J	1.5 J
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71				1.9 U	380 U	1.8 U	1.7 U	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57					250 U			21
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71				350	670	100	100	120
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71				5,100	13,000	2,200	2,100	5,300
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71				1,900	5,700	710	660	880
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71				14	380 U	9.3	9.3	12
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57					750 U			2.8 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28		490	720 J	250	240	490
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36		10,000	25,000	2,000	2,100	3,300
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57					1,100			100
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71				0.93 U	750 U	0.91 U	0.49 J	2.8 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71				1.9 U	750 U	1.8 U	1.7 U	2.8 U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71				1.9 U	380 U	1.8 U	1.7 U	1.4 U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37				10,490		2,250	2,340	

Footnote:
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Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25
									Loc ID	MW25-13	MW25-13	MW25-15	MW25-15	MW25-15	MW25-17
									Matrix	GW	GW	GW	GW	GW	GW
									Sample ID	25SI20008	25ESI20031	25SI20009	25SI20013	25ESI20032	25SI20010
									Sample Date	4/12/2017	3/24/2021	4/11/2017	4/11/2017	3/25/2021	4/12/2017
									QC Type	SA	SA	SA	DU	SA	SA
									Study ID	PFAS GW Event 2017-04	2020 PFAS ESI 4	PFAS GW Event 2017-04	PFAS GW Event 2017-04	2020 PFAS ESI 4	PFAS GW Event 2017-04
									Sample Round						
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)															
6:2 FTS	NG/L	20	J	MW25-34D	2	57					19 U			13 J	
8:2 FTS	NG/L	0			0	57					9.4 U			9.5 U	
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				13 U	9.4 U	13 U	14 U	9.5 U	15 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				13 U	9.4 U	13 U	14 U	9.5 U	15 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71				2 J	2.4	360	340	410	500
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57					1.4 J			92	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57					1.4 U			1.4 U	
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71				0.89 U	0.94 U	4.7	4.4	2.9 J+	1.7 J
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71				1.8 U	1.4 U	1.7 U	1.9 U	1.4 U	2 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57					0.94 U			15	
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71				3.9	0.57 J	260	250	210	470
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71				22	14	3,400	3,300	4,400	19,000
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71				21	2	890	890	760	1,200
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71				1.8 U	1.4 U	36	35	29 J+	35
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57					2.8 U			2.8 U	
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28		1.4 J	2.8 U	490	480	410	2,600
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36		70	15	6,800	6,900	9,500	11,000
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57					0.72 J			210 J+	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71				0.89 U	2.8 U	0.87 UJ	0.95 UJ	2.8 U	0.98 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71				1.8 U	2.8 U	1.7 U	1.9 U	2.8 U	2 U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71				1.8 U	1.4 U	1.7 U	1.9 U	1.4 U	2 U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37				71.4 J		7,290	7,380		13,600

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Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25
									Loc ID	MW25-17	MW25-18	MW25-18	MW25-19	MW25-19
									Matrix	GW	GW	GW	GW	GW
									Sample ID	25ESI20033	25SI20011	25ESI20034	25SI20012	25ESI20035
									Sample Date	3/23/2021	4/12/2017	3/23/2021	4/10/2017	3/23/2021
									QC Type	SA	SA	SA	SA	SA
									Study ID	2020 PFAS ESI	PFAS GW Event 2017-04	2020 PFAS ESI	PFAS GW Event 2017-04	2020 PFAS ESI
									Sample Round	4		4		4
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	20	J	MW25-34D	2	57				5,000 U		190 U		5,000 U
8:2 FTS	NG/L	0			0	57				2,500 U		93 U		2,500 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				2,500 U	15 U	93 U	15 U	2,500 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				2,500 U	15 U	93 U	15 U	2,500 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71				490 J	76	100	840	840 J+
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57				1,600		23		190 J
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57				380 U		14 U		380 U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71				250 U	0.98 U	9.3 U	13	250 U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71				380 U	2 U	14 U	1.9 U	380 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57				430 J		4.1 J		250 U
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71				470 J	18	24	400	430 J
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71				46,000	920	1,500	13,000	17,000
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71				1,500	120	180	2,900	2,800
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71				380 U	2 U	14 U	40	380 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57				750 U		28 U		750 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28		6,100 J	20	45 J	2,100	1,500
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36		19,000	550	810	10,000	11,000
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57				320 J		39		560
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71				750 U	0.67 J	28 U	0.97 UJ	750 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71				750 U	2 U	28 U	1.9 U	750 U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71				380 U	2 U	14 U	1.9 U	380 U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37					570		12,100	

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Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

									Area	SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
									Loc ID	MW25-2		MW25-2		MW25-20		MW25-20		MW25-20	
									Matrix	GW		GW		GW		GW		GW	
									Sample ID	25SI20002		25ESI20025		25ESI20001		25ESI20007		25ESI20036	
									Sample Date	4/11/2017		3/22/2021		5/28/2019		5/28/2019		3/23/2021	
									QC Type	SA		SA		SA		DU		SA	
									Study ID	PFAS GW Event 2017-04		2020 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2020 PFAS ESI	
									Sample Round			4						4	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Num of Detects**	**Num of Analyses**	**Action Level**	**Detects Above Standard**		Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																			
6:2 FTS	NG/L	20	J	MW25-34D	2	57						5,000	U	19	U	19	U	18	U
8:2 FTS	NG/L	0			0	57						2,500	U	9.4	U	9.6	U	9.1	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				15	U	2,500	U	9.4	U	9.6	U	9.1	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				15	U	2,500	U	9.4	U	9.6	U	9.1	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71				1,500		2,000	J+	1.8	J	1.8	J	2.1	
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57						3,600	J-	6.3		6.3		3.2	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57						380	U	1.4	U	1.4	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71				65		250	U	0.94	U	0.96	U	0.91	U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71				2	U	380	U	1.4	U	1.4	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57						100	J	0.94	U	0.96	U	0.91	U
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71				3,200		13,000		1.8	J	1.8	J	0.69	J
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71				17,000		23,000		8.2		8.4		10	
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71				14,000		50,000		6.4		6.9		1.1	J
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71				90		170	J	1.4	U	1.4	U	1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57						750	U	2.8	U	2.9	U	2.7	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28		3,900		2,800		2.8	U	2.9	U	2.7	J
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36		89,000	J	580,000		8.7		7.6		3.8	
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57						13,000	J-	6.7		6.1		1.2	J
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71				1	U	750	U	2.8	U	2.9	U	2.7	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71				2	U	750	U	2.8	U	2.9	U	2.7	U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71				1.8	J	380	U	1.4	U	1.4	U	1.4	U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37				92,900	J			11.5		10.5			

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Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25
									Loc ID	MW25-21	MW25-21	MW25-22	MW25-22	MW25-22D
									Matrix	GW	GW	GW	GW	GW
									Sample ID	25ESI20002	25ESI20037	25ESI20003	25ESI20038	25ESI20015
									Sample Date	5/31/2019	3/24/2021	5/29/2019	3/24/2021	8/19/2020
									QC Type	SA	SA	SA	SA	SA
									Study ID	2019 PFAS ESI	2020 PFAS ESI	2019 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI
									Sample Round		4		4	3
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	20	J	MW25-34D	2	57				19 UJ	19 U	19 U	19 U	19 U
8:2 FTS	NG/L	0			0	57				9.4 UJ	9.7 U	9.3 U	9.5 U	9.4 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9.4 UJ	9.7 U	9.3 U	9.5 U	9.4 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9.4 UJ	9.7 U	9.3 U	9.5 U	9.4 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71				58 J	9.5	51	62	0.94 U
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57				58 J	19	43	32	1.4 U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57				1.4 UJ	1.5 U	1.4 U	1.4 U	1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71				0.94 UJ	0.97 U	0.93 U	0.95 U	0.94 U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71				1.4 UJ	1.5 U	1.4 U	1.4 U	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57				5.5 J	0.97 U	0.92 J	0.89 J	0.94 U
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71				28 J	8.6	32	40	1.4 U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71				310 J	85	510 J	600	2
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71				250 J	61	280 J	250	1.9 U
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71				0.5 J	1.5 U	0.69 J	0.91 J	1.4 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57				2.8 UJ	2.9 U	2.8 U	2.8 U	2.8 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28		140 J	6.1	16 J	10 J	2.8 U
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36		720 J	200	1,000 J+	1,300	6.8
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57				110 J	31	89	68	1.9 U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71				2.8 UJ	2.9 U	2.8 U	2.8 U	2.8 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71				2.8 UJ	2.9 U	2.8 U	2.8 U	2.8 U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71				1.4 UJ	1.5 U	1.4 U	1.4 U	1.4 U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37				860 J		1,016 J		9.6

Footnote:
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5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for details.
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U = non-detect, i.e. not detected at or above this value. J- = The result is an estimated quantity,
J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not detected:
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action Levels,
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that
- Bold Outline values represent a results that is above New York State Maximum Contaminant ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25
									Loc ID	MW25-22D	MW25-22D	MW25-23	MW25-23	MW25-23
									Matrix	GW	GW	GW	GW	GW
									Sample ID	25ESI20039	25ESI20057	25ESI20004	25ESI20008	25ESI20040
									Sample Date	3/30/2021	3/30/2021	5/29/2019	5/29/2019	3/24/2021
									QC Type	SA	DU	SA	DU	SA
									Study ID	2020 PFAS ESI	2020 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI	2020 PFAS ESI
									Sample Round	4	4			4
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	20	J	MW25-34D	2	57				18 U	18 U	19 U	19 UJ	19 U
8:2 FTS	NG/L	0			0	57				9 U	9.1 U	9.4 U	9.5 UJ	9.6 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9 U	9.1 U	9.4 U	9.5 UJ	9.6 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9 U	9.1 U	9.4 U	9.5 UJ	9.6 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71				0.9 U	0.91 U	0.94 U	0.95 UJ	0.96 U
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57				1.4 U	1.4 U	4.4	4.6 J	2.8
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57				1.4 U	1.4 U	1.4 U	1.4 UJ	1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71				0.9 U	0.91 U	0.94 U	0.95 UJ	0.96 U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71				1.4 U	1.4 U	1.4 U	1.4 UJ	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57				0.9 U	0.91 U	0.94 U	0.95 UJ	0.96 U
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71				1.4 U	1.4 U	0.62 J	0.69 J	1.4 U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71				0.6 J	0.62 J	0.94 U	0.95 UJ	1 J
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71				1.8 U	1.8 U	3	2.6 J	1.4 J
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71				1.4 U	1.4 U	1.4 U	1.4 UJ	1.4 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57				2.7 U	1.3 J	2.8 U	2.9 UJ	2.9 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28		2.7 U	2.7 U	2.8 U	2.9 UJ	2.9 U
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36		1.8	1.5 J	3	3.7 J	3.1
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57				0.9 U	0.91 U	4.4	4.3 J	2.2
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71				2.7 U	2.7 U	2.8 U	2.9 UJ	2.9 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71				2.7 U	2.7 U	2.8 U	2.9 UJ	2.9 U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71				1.4 U	1.4 U	1.4 U	1.4 UJ	1.4 U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37						5.8	6.6 J	

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
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J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not detected:
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action Levels,
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Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	Loc ID	Matrix	Sample ID	Sample Date	QC Type	Study ID	Sample Round
									SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25			
									MW25-24	MW25-24	MW25-25	MW25-25	MW25-26			
									GW	GW	GW	GW	GW			
									25ESI20005	25ESI20041	25ESI20006	25ESI20042	25ESI20009			
									5/30/2019	3/17/2021	5/30/2019	3/23/2021	10/17/2019			
									SA	SA	SA	SA	SA			
									2019 PFAS ESI	2020 PFAS ESI	2019 PFAS ESI	2020 PFAS ESI	2019 PFAS ESI			
										4		4	2			
									Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																
6:2 FTS	NG/L	20	J	MW25-34D	2	57			19	U	18	U	19	U	18	U	19	U
8:2 FTS	NG/L	0			0	57			9.6	U	9	U	9.4	U	9.2	U	9.6	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71			9.6	U	9	U	9.4	U	9.2	U	9.6	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71			9.6	U	9	U	9.4	U	9.2	U	9.6	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71			0.78	J	0.9	U	0.78	J	0.77	J	0.96	U
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57			6.7		1.4	U	4.1		5		2.3	U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57			1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71			0.96	U	0.9	U	0.94	U	0.92	U	0.96	U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71			1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57			0.96	U	0.9	U	0.94	U	0.92	U	0.96	U
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71			4.4		1.4	U	1.4	U	4.4		1.4	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71			9.2		1.4	J	3.3		6.6		0.96	U
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71			7.3		0.9	U	0.54	J	5.8		0.96	U
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71			0.5	J	1.4	U	1.4	U	0.51	J	1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57			2.9	U	2.7	U	2.8	U	2.8	U	2.9	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28	11		2.7	U	2.8	U	7.7		2.9	U
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36	3.7		1.4	U	0.79	J	3		1.4	U
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57			9.1		0.9	U	0.94	U	5.3		0.96	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71			2.9	U	2.7	U	2.8	U	2.8	U	2.9	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71			2.9	U	2.7	U	2.8	U	2.8	U	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71			1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37			14.7				3.59	J			4.3	U

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Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25
									Loc ID	MW25-26	MW25-27	MW25-27	MW25-28	MW25-28
									Matrix	GW	GW	GW	GW	GW
									Sample ID	25ESI20043	25ESI20010	25ESI20044	25ESI20011	25ESI20014
									Sample Date	3/25/2021	10/16/2019	3/25/2021	10/18/2019	10/18/2019
									QC Type	SA	SA	SA	SA	DU
									Study ID	2020 PFAS ESI	2019 PFAS ESI	2020 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI
									Sample Round	4	2	4	2	2
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	20	J	MW25-34D	2	57				18 U	19 U	18 U	20 U	20 U
8:2 FTS	NG/L	0			0	57				9.1 U	9.6 U	9.2 U	9.8 U	10 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9.1 U	9.6 U	9.2 U	9.8 U	10 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9.1 U	9.6 U	9.2 U	9.8 U	10 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71				0.91 U	0.96 U	0.92 U	1.2 J	0.97 J
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57				1.4 U	20	8.5	10	9.7
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57				1.4 U	1.4 U	1.4 U	1.5 U	1.5 U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71				0.91 U	0.96 U	0.92 U	0.98 U	1 U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71				1.4 U	1.4 U	1.4 U	1.5 U	1.5 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57				0.91 U	0.96 U	0.92 U	0.98 U	1 U
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71				1.4 U	1.4 U	1.4 U	4.5	4
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71				0.91 U	0.43 J	0.92 U	12	11
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71				0.91 U	1.4 J	0.92 U	10	9.6
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71				1.4 U	1.4 U	1.4 U	1.2 J	1.2 J
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57				2.7 U	2.9 U	2.7 U	2.9 U	3 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28		2.7 U	2.9 U	2.7 U	7.9	8.3
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36		1.4 U	0.94 J	1.4 U	11	11
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57				0.91 U	1.4 J	0.92 U	11	9.8
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71				2.7 U	2.9 U	2.7 U	2.9 U	3 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71				2.7 U	2.9 U	2.7 U	2.9 U	3 U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71				1.4 U	1.4 U	1.4 U	1.5 U	1.5 U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37					3.84 J		18.9	19.3

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J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not detected:
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Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

								Area	SEAD-25		SEAD-25		SEAD-25		SEAD-25	
								Loc ID	MW25-28		MW25-29		MW25-29		MW25-3	
								Matrix	GW		GW		GW		GW	
								Sample ID	25ESI20045		25ESI20012		25ESI20046		25SI20003	
								Sample Date	3/30/2021		10/17/2019		3/24/2021		4/11/2017	
								QC Type	SA		SA		SA		SA	
								Study ID	2020 PFAS ESI		2019 PFAS ESI		2020 PFAS ESI		PFAS GW Event 2017-04	
								Sample Round	4		2		4			
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Num of Detects**	**Num of Analyses**	**Action Level**	**Detects Above Standard**	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																
6:2 FTS	NG/L	20	J	MW25-34D	2	57			18	U	20	U	19	U		
8:2 FTS	NG/L	0			0	57			8.9	U	9.8	U	9.5	U		
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71			8.9	U	9.8	U	9.5	U	14	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71			8.9	U	9.8	U	9.5	U	14	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71			0.89	U	0.98	U	0.95	U	240	
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57			3.8		2	U	1.4	U		
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57			1.3	U	1.5	U	1.4	U		
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71			0.89	U	0.98	U	0.95	U	37	
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71			1.3	U	1.5	U	1.4	U	0.56	J
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57			0.89	U	0.98	U	0.95	U		
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71			1.5	J	1.5	U	1.4	U	220	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71			5.8		0.37	J	0.95	U	5,200	J
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71			4.2		0.98	U	0.95	U	1,100	
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71			1.3	U	1.5	U	1.4	U	29	
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57			2.7	U	2.9	U	2.8	U		
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28	1.9	J	2.9	U	2.8	U	2,300	J
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36	5.8		0.53	J	1.4	U	7,500	J
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57			3.7		0.98	U	0.95	U		
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71			2.7	U	2.9	U	2.8	U	0.92	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71			2.7	U	2.9	U	2.8	U	2.1	J
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71			1.3	U	1.5	U	1.4	U	5.2	
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37					3.43	J			9,800	J

								Area	SEAD-25		SEAD-25	
								Loc ID	MW25-3		MW25-3	
								Matrix	GW		GW	
								Sample ID	25SI20004		25ESI20026	
								Sample Date	4/11/2017		3/24/2021	
								QC Type	SA		SA	
								Study ID	PFAS GW Event 2017-04		2020 PFAS ESI	
								Sample Round			4	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Num of Detects**	**Num of Analyses**	**Action Level**	**Detects Above Standard**	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)												
6:2 FTS	NG/L	20	J	MW25-34D	2	57					19	U
8:2 FTS	NG/L	0			0	57					9.6	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71					9.6	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71					9.6	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71					220	J+
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57					230	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57					1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71					31	J+
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71					1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57					13	
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71					340	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71					3,200	
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71					1,800	
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71					18	J+
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57					2.9	J
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28			960	
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36			13,000	
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57					590	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71					2.9	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71					2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71					1.4	U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37						

Footnote:
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Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25
									Loc ID	MW25-30	MW25-30	MW25-31	MW25-31	MW25-31
									Matrix	GW	GW	GW	GW	GW
									Sample ID	25ESI20013	25ESI20047	25ESI20016	25ESI20048	25ESI20055
									Sample Date	10/17/2019	3/23/2021	8/20/2020	3/22/2021	3/22/2021
									QC Type	SA	SA	SA	SA	DU
									Study ID	2019 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI
									Sample Round	2	4	3	4	4
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	20	J	MW25-34D	2	57				19 U	19 U	17 U	5,000 U	5,000 U
8:2 FTS	NG/L	0			0	57				9.7 U	9.3 U	8.7 U	2,500 U	2,500 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9.7 U	9.3 U	8.7 U	2,500 U	2,500 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9.7 U	9.3 U	8.7 U	2,500 U	2,500 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71				0.97 U	0.93 U	180	590	620 J+
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57				4.2	1.4 U	660	920	820
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57				1.4 U	1.4 U	1.3 U	380 U	380 U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71				0.97 U	0.93 U	32 J+	250 U	250 U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71				1.4 U	1.4 U	1.3 U	380 U	380 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57				0.97 U	0.93 U	3.6	250 U	250 U
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71				1.4 U	1.4 U	1,100	2,600	2,600
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71				0.48 J	0.73 J	1,900	7,700	6,200
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71				0.97 U	0.93 U	6,100	11,000	9,700
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71				1.4 U	1.4 U	38	380 U	380 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57				2.9 U	2.8 U	2.4 J	750 U	750 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28		2.9 U	2.8 U	420	1,900	1,800
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36		1.4 U	7.6	65,000 J	130,000	100,000
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57				1.9 U	0.93 U	2,200	3,600	3,600
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71				2.9 U	2.8 U	2.6 U	750 U	750 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71				2.9 U	2.8 U	2.6 U	750 U	750 U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71				1.4 U	1.4 U	1.3 U	380 U	380 U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37				4.3 U		65,420 J		

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Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25
									Loc ID	MW25-31D-DN	MW25-31D-DN	MW25-31D-DN	MW25-31D-UP	MW25-31D-UP
									Matrix	GW	GW	GW	GW	GW
									Sample ID	25ESI20018	25ESI20023	25ESI20050	25ESI20017	25ESI20049
									Sample Date	8/20/2020	8/20/2020	3/30/2021	8/19/2020	3/30/2021
									QC Type	SA	DU	SA	SA	SA
									Study ID	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI
									Sample Round	3	3	4	3	4
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	20	J	MW25-34D	2	57				18 U	18 U	19 U	18 U	18 U
8:2 FTS	NG/L	0			0	57				9.1 U	9.2 U	9.5 U	8.9 U	9.1 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9.1 U	9.2 U	9.5 U	8.9 U	9.1 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9.1 U	9.2 U	9.5 U	8.9 U	9.1 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71				0.91 U	0.92 U	0.95 U	0.89 U	0.91 U
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57				1.4 U	1.4 U	1.9 U	1.3 U	1.8 U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57				1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71				0.91 U	0.92 U	0.95 U	0.89 U	0.91 U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71				1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57				0.91 U	0.92 U	0.95 U	0.89 U	0.91 U
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71				1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71				0.4 J	0.53 J	0.36 J	1.8 U	0.47 J
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71				0.91 U	0.92 U	0.95 U	0.89 U	0.91 U
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71				1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57				3 J	3.1 J	2.8 U	2.7 U	2.7 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28		2.7 U	2.8 U	2.8 U	2.7 U	2.7 U
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36		1.8 U	1.8 U	0.69 J	1.8 U	2
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57				1.8 U	1.8 U	0.95 U	1.8 U	0.91 U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71				2.7 UJ	2.8 UJ	2.8 U	2.7 U	2.7 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71				2.7 U	2.8 U	2.8 U	2.7 U	2.7 U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71				1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37				4.5 U	4.6 U		4.5 U	

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Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	Loc ID	Matrix	Sample ID	Sample Date	QC Type	Study ID	Sample Round	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
									SEAD-25	MW25-32	GW	25ESI20019	8/19/2020	SA	2020 PFAS ESI	3								
									SEAD-25	MW25-32	GW	25ESI20051	3/24/2021	SA	2020 PFAS ESI	4								
									SEAD-25	MW25-33	GW	25ESI20020	8/20/2020	SA	2020 PFAS ESI	3								
									SEAD-25	MW25-33	GW	25ESI20052	3/23/2021	SA	2020 PFAS ESI	4								
									SEAD-25	MW25-33	GW	25ESI20056	3/23/2021	DU	2020 PFAS ESI	4								
Per- and polyfluoroalkyl substances (PFAS)																									
6:2 FTS	NG/L	20	J	MW25-34D	2	57			18	U	19	U	18	U	19	U	19	U								
8:2 FTS	NG/L	0			0	57			9	U	9.7	U	9	U	9.3	U	9.4	U								
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71			9	U	9.7	U	9	U	9.3	U	9.4	U								
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71			9	U	9.7	U	9	U	9.3	U	9.4	U								
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71			0.77	J	0.97	U	0.61	J	0.93	U	0.94	U								
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57			6.4		1.5	U	1.3	J	1.4	U	1.4	U								
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57			1.3	U	1.5	U	1.4	U	1.4	U	1.4	U								
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71			0.9	U	0.97	U	0.9	U	0.93	U	0.94	U								
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71			1.3	U	1.5	U	1.4	U	1.4	U	1.4	U								
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57			0.9	U	0.97	U	0.9	U	0.93	U	0.94	U								
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71			1.3	U	1.5	U	1.1	J	1.4	U	1.4	U								
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71			3.2		1.5	J	2.9		0.49	J	0.94	U								
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71			1.8	U	0.97	U	5.8		0.93	U	0.94	U								
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71			1.3	U	1.5	U	1.4	U	1.4	U	1.4	U								
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57			2.7	U	2.9	U	2.7	U	2.8	U	2.8	U								
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28	2.7	U	2.9	U	2.7	U	2.8	U	2.8	U								
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36	1.8	U	1.5	U	61		1.4	U	1.4	U								
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57			1.8	U	0.97	U	2.4		0.93	U	0.94	U								
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71			2.7	U	2.9	U	2.7	U	2.8	U	2.8	U								
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71			2.7	U	2.9	U	2.7	U	2.8	U	2.8	U								
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71			1.3	U	1.5	U	1.4	U	1.4	U	1.4	U								
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37			4.5	U			63.7													

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Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25
									Loc ID	MW25-34	MW25-34	MW25-34D	MW25-34D	MW25-6
									Matrix	GW	GW	GW	GW	GW
									Sample ID	25ESI20021	25ESI20053	25ESI20022	25ESI20054	25SI20004
									Sample Date	8/21/2020	3/26/2021	8/31/2020	3/31/2021	4/12/2017
									QC Type	SA	SA	SA	SA	SA
									Study ID	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	PFAS GW Event 2017-04
									Sample Round	3	4	3	4	
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	20	J	MW25-34D	2	57				17 U	18 U	20 J	19 U	
8:2 FTS	NG/L	0			0	57				8.6 U	9.1 U	8.2 U	9.5 U	
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				8.6 U	9.1 U	8.2 U	9.5 U	14 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				8.6 U	9.1 U	8.2 U	9.5 U	14 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71				0.86 U	0.91 U	0.82 U	0.95 U	4.3
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57				1.3 U	1.4 U	1.2 U	1.9 U	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57				1.3 U	1.4 U	1.2 U	1.4 U	
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71				0.86 U	0.91 U	0.82 U	0.95 U	0.96 U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71				1.3 U	1.4 U	1.2 U	1.4 U	1.9 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57				0.86 U	0.91 U	0.82 U	0.95 U	
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71				1.3 U	1.4 U	1.2 U	1.4 U	8.1
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71				0.86 U	0.91 U	1.6 U	12 J	88
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71				0.86 U	0.91 U	0.82 U	1.2 J	37
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71				1.3 U	1.4 U	1.2 U	1.4 U	0.63 J
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57				2.6 U	2.7 U	2.5 U	2.9 U	
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28		2.6 U	2.7 U	3.3 U	2.9 U	5.8
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36		0.96 J	1.4 U	1.1 J	1.9 U	140
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57				0.86 U	0.91 U	0.82 U	0.52 J	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71				2.6 U	2.7 U	2.5 U	2.9 U	0.96 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71				2.6 U	2.7 U	2.5 U	2.9 U	1.9 U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71				1.3 U	1.4 U	1.2 U	1.4 U	1.9 U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37				3.56 J		4.4 J		145.8

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding rejected
3) NLE = no limit established.
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5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for details.
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U = non-detect, i.e. not detected at or above this value. J- = The result is an estimated quantity,
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8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action Levels,
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that
- Bold Outline values represent a results that is above New York State Maximum Contaminant ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F5 - SEAD-25 Groundwater Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-25
									Loc ID	MW25-6	MW25-8	MW25-8	MW25-9	MW25-9
									Matrix	GW	GW	GW	GW	GW
									Sample ID	25ESI20027	25SI20005	25ESI20028	25SI20006	25ESI20029
									Sample Date	3/22/2021	4/11/2017	3/24/2021	4/11/2017	3/24/2021
									QC Type	SA	SA	SA	SA	SA
									Study ID	2020 PFAS ESI	PFAS GW Event 2017-04	2020 PFAS ESI	PFAS GW Event 2017-04	2020 PFAS ESI
									Sample Round	4		4		4
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	20	J	MW25-34D	2	57				18 U		19 U		19 U
8:2 FTS	NG/L	0			0	57				9 U		9.3 U		9.3 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9 U	14 U	9.3 U	14 U	9.3 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	71				9 U	14 U	9.3 U	14 U	9.3 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	4,500		MW25-8	43	71				5.9	1,600	4,500	670	690
Perfluorobutyric acid (PFBA)	NG/L	3,600	J-	MW25-2	36	57				4		270 J+		140 J+
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	57				1.4 U		1.4 U		1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	17	71				0.9 U	30	40 J+	14	10 J+
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	71				1.4 U	1.9 U	1.4 U	1.9 U	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1,100		MW25-8	12	57				0.9 U		1,100		48
Perfluoroheptanoic acid (PFHpA)	NG/L	13,000		MW25-2	44	71				2.7	830	920	380	460
Perfluorohexanesulfonic acid (PFHxS)	NG/L	50,000	J	MW25-8	60	71				110	36,000 J	50,000 J	8,900	9,500
Perfluorohexanoic acid (PFHxA)	NG/L	50,000		MW25-2	48	71				12	5,900	5,500	1,600	1,300
Perfluorononanoic acid (PFNA)	NG/L	190		MW25-8	26	71				1.4 U	140	190	43	40 J+
Perfluorooctane Sulfonamide (FOSA)	NG/L	8	J+	MW25-8	6	57				2.7 U		8 J+		2.8 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	12,000		MW25-8	38	71	10	28		2.5 J	8,300	12,000	1,400	1,900 J-
Perfluorooctanoic acid (PFOA)	NG/L	580,000		MW25-2	56	71	10	36		66	17,000	26,000	18,000	31,000
Perfluoropentanoic acid (PFPA)	NG/L	13,000	J-	MW25-2	33	57				3.2		750		470
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	71				2.7 U	0.38 J	2.8 U	0.94 U	2.8 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	71				2.7 U	1.9 U	2.8 U	1.9 U	2.8 U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	71				1.4 U	1.9 U	1.4 U	1.9 U	1.4 U
PFOS + PFOA Summation	NG/L	92,900	J	MW25-2	31	37					25,300		19,400	

Footnote:
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6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for details.
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8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action Levels,
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that
- Bold Outline values represent a results that is above New York State Maximum Contaminant ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F6 - SEAD-25, Surface Water Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard									
Area									SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
Loc ID									25SW-01		25SW-01		25SW-01		25SW-02		25SW-02	
Matrix									SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
Sample ID									25ESI30001		25ESI30004		25ESI30006		25ESI30002		25ESI30003	
Sample Date									6/3/2019		8/21/2020		3/30/2021		6/3/2019		6/3/2019	
QC Type									SA		SA		SA		SA		DU	
Study ID									2019 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI	
Sample Round											3		4					
Per- and polyfluoroalkyl substances (PFAS)									Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
6:2 FTS	NG/L	81		25SW-01	6	16			81		19	U	52		46		46	
8:2 FTS	NG/L	21		25SW-01	6	16			21		9.3	U	14	J	17	J	15	J
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16			9.4	U	9.3	U	8.9	U	9.9	U	9.5	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16			9.4	U	9.3	U	8.9	U	9.9	U	9.5	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	640		25SW-05	14	16			4.7		1.1	J	1.8		7.1		7.6	
Perfluorobutyric acid (PFBA)	NG/L	14		25SW-02	15	16			11		5		8.5		12		11	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	16			1.4	U	1.4	U	1.3	U	1.5	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	0.59	J	25SW-02	2	16			0.5	J	0.93	U	0.89	U	0.99	U	0.95	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	16			1.4	U	1.4	U	1.3	U	1.5	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1.7	J	25SW-01	7	16			1.7	J	0.93	U	0.43	J	1.4	J	1.2	J
Perfluoroheptanoic acid (PFHpA)	NG/L	23		25SW-02	13	16			15		3.5		15		16		18	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	130		25SW-02 25SW-02	15	16			38		9.9		30		130		130	
Perfluorohexanoic acid (PFHxA)	NG/L	43		25SW-02	15	16			27		8.6		24		41		43	
Perfluorononanoic acid (PFNA)	NG/L	4.5		25SW-02	12	16			2.7		0.86	J	2.1		3		2.7	
Perfluorooctane Sulfonamide (FOSA)	NG/L	2	J	25SW-01	2	16			2.8	U	1.2	J	2	J	3	U	2.8	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	78		25SW-01	15	16	10	12	78		16		34		62		53	
Perfluorooctanoic acid (PFOA)	NG/L	120		25SW-02	15	16	10	12	26		7.2		30		110		120	
Perfluoropentanoic acid (PFPA)	NG/L	34		25SW-02	13	16			27		7.8		23		30		30	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	16			2.8	U	2.8	U	2.7	U	3	U	2.8	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	16			2.8	U	2.8	U	2.7	U	3	U	2.8	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	16			1.4	U	1.4	U	1.3	U	1.5	U	1.4	U
PFOS + PFOA Summation	NG/L	173		25SW-02	9	9			104		23.2				172		173	

Footnote:
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results. Sample duplicate pairs have not been averaged.
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6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for details.
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8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to
Criteria that are present.
Levels (MCL). ####

10) Criteria action level source document and web address.
links.
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F6 - SEAD-25, Surface Water Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard									
Area									SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
Loc ID									25SW-02		25SW-02		25SW-02		25SW-03		25SW-04	
Matrix									SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
Sample ID									25ESI30005		25ESI30011		25ESI30016		25ESI30012		25ESI30007	
Sample Date									8/21/2020		3/30/2021		3/30/2021		3/24/2021		8/24/2020	
QC Type									SA		SA		DU		SA		SA	
Study ID									2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI	
Sample Round									3		4		4		4		3	
Per- and polyfluoroalkyl substances (PFAS)									Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
6:2 FTS	NG/L	81		25SW-01	6	16			17	U	22	J	20	J	19	U	18	U
8:2 FTS	NG/L	21		25SW-01	6	16			8.6	U	3.2	J	3.4	J	9.5	U	8.9	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16			8.6	U	8.7	U	8.8	U	9.5	U	8.9	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16			8.6	U	8.7	U	8.8	U	9.5	U	8.9	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	640		25SW-05	14	16			2.2		5.8		4.8		0.95	U	1.8	
Perfluorobutyric acid (PFBA)	NG/L	14		25SW-02	15	16			9		12		14		1.4	J	8.4	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	16			1.3	U	1.3	U	1.3	U	1.4	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	0.59	J	25SW-02	2	16			0.59	J	0.87	U	0.88	U	0.95	U	0.89	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	16			1.3	U	1.3	U	1.3	U	1.4	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1.7	J	25SW-01	7	16			0.54	J	0.61	J	0.68	J	0.95	U	0.89	U
Perfluoroheptanoic acid (PFHpA)	NG/L	23		25SW-02	13	16			10		23		21		1.4	U	8.7	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	130		25SW-02 25SW-02	15	16			26		76		73		1.5	J	23	
Perfluorohexanoic acid (PFHxA)	NG/L	43		25SW-02	15	16			22		39		40		1.1	J	17	
Perfluorononanoic acid (PFNA)	NG/L	4.5		25SW-02	12	16			4.5		2.9		2.8		1.4	U	2.5	
Perfluorooctane Sulfonamide (FOSA)	NG/L	2	J	25SW-01	2	16			2.6	U	2.6	U	2.6	U	2.8	U	2.7	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	78		25SW-01	15	16	10	12	62		25		26		1.1	J	27	
Perfluorooctanoic acid (PFOA)	NG/L	120		25SW-02	15	16	10	12	27		94		110		0.54	J	20	
Perfluoropentanoic acid (PFPA)	NG/L	34		25SW-02	13	16			19		31		34		0.95	U	14	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	16			2.6	UJ	2.6	U	2.6	U	2.8	U	2.7	UJ
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	16			2.6	U	2.6	U	2.6	U	2.8	U	2.7	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	16			1.3	U	1.3	U	1.3	U	1.4	U	1.3	U
PFOS + PFOA Summation	NG/L	173		25SW-02	9	9			89								47	

Footnote:
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results. Sample duplicate pairs have not been averaged.
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Levels (MCL). ####

10) Criteria action level source document and web address.
links.
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F6 - SEAD-25, Surface Water Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard									
Area									SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25
Loc ID									25SW-04		25SW-05		25SW-05		25SW-06		25SW-06
Matrix									SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER
Sample ID									25ESI30013		25ESI30008		25ESI30014		25ESI30009		25ESI30010
Sample Date									3/30/2021		8/25/2020		3/30/2021		8/25/2020		8/25/2020
QC Type									SA		SA		SA		SA		DU
Study ID									2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI
Sample Round									4		3		4		3		3
Per- and polyfluoroalkyl substances (PFAS)									Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value Qual
6:2 FTS	NG/L	81		25SW-01	6	16			18	U	18	U	18	U	17	U	18 U
8:2 FTS	NG/L	21		25SW-01	6	16			8.9	U	8.8	U	9.2	U	8.6	U	8.8 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16			8.9	U	8.8	U	9.2	U	8.6	U	8.8 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16			8.9	U	8.8	U	9.2	U	8.6	U	8.8 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	640		25SW-05	14	16			0.66	J	640		0.92	U	2.6		3.2
Perfluorobutyric acid (PFBA)	NG/L	14		25SW-02	15	16			2		7.7		1.8	U	9.1		9.5
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	16			1.3	U	1.3	U	1.4	U	1.3	U	1.3 U
Perfluorodecanoic acid (PFDA)	NG/L	0.59	J	25SW-02	2	16			0.89	U	0.88	U	0.92	U	0.86	U	0.88 U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	16			1.3	U	1.3	U	1.4	U	1.3	U	1.3 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1.7	J	25SW-01	7	16			0.89	U	0.88	U	0.92	U	0.86	U	0.88 U
Perfluoroheptanoic acid (PFHpA)	NG/L	23		25SW-02	13	16			1.3	U	8.6		1.4	U	10		10
Perfluorohexanesulfonic acid (PFHxS)	NG/L	130		25SW-02 25SW-02	15	16			4.4		25		0.92	U	30		32
Perfluorohexanoic acid (PFHxA)	NG/L	43		25SW-02	15	16			2.5		19		1.8	U	23		23
Perfluorononanoic acid (PFNA)	NG/L	4.5		25SW-02	12	16			1.3	U	3.6		1.4	U	3.9		4.1
Perfluorooctane Sulfonamide (FOSA)	NG/L	2	J	25SW-01	2	16			2.7	U	2.6	U	2.8	U	2.6	U	2.6 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	78		25SW-01	15	16	10	12	2	J	51		2.8	U	34		34
Perfluorooctanoic acid (PFOA)	NG/L	120		25SW-02	15	16	10	12	5		22		1.4	U	29		29
Perfluoropentanoic acid (PFPA)	NG/L	34		25SW-02	13	16			0.89	U	15		0.92	U	18		18
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	16			2.7	U	2.6	UJ	2.8	U	2.6	U	2.6 UJ
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	16			2.7	U	2.6	U	2.8	U	2.6	U	2.6 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	16			1.3	U	1.3	U	1.4	U	1.3	U	1.3 U
PFOS + PFOA Summation	NG/L	173		25SW-02	9	9					73				63		63

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
results. Sample duplicate pairs have not been averaged.
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
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10) Criteria action level source document and web address.
links.
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Table F6 - SEAD-25, Surface Water Results
Expanded Site Investigation
Seneca Army Depot Activity

								Area		SEAD-25
								Loc ID		25SW-06
								Matrix		SURFACE WATER
								Sample ID		25ESI30015
								Sample Date		3/30/2021
								QC Type		SA
								Study ID		2020 PFAS ESI
								Sample Round		4
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Num of Detects**	**Num of Analyses**	**Action Level**	**Detects Above Standard**	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)										
6:2 FTS	NG/L	81		25SW-01	6	16			19	U
8:2 FTS	NG/L	21		25SW-01	6	16			9.3	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16			9.3	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16			9.3	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	640		25SW-05	14	16			1.8	J
Perfluorobutyric acid (PFBA)	NG/L	14		25SW-02	15	16			3.2	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	16			1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	0.59	J	25SW-02	2	16			0.93	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	16			1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1.7	J	25SW-01	7	16			0.93	U
Perfluoroheptanoic acid (PFHpA)	NG/L	23		25SW-02	13	16			4.6	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	130		25SW-02 25SW-02	15	16			19	
Perfluorohexanoic acid (PFHxA)	NG/L	43		25SW-02	15	16			8.9	
Perfluorononanoic acid (PFNA)	NG/L	4.5		25SW-02	12	16			1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	2	J	25SW-01	2	16			2.8	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	78		25SW-01	15	16	10	12	5.3	
Perfluorooctanoic acid (PFOA)	NG/L	120		25SW-02	15	16	10	12	24	
Perfluoropentanoic acid (PFPA)	NG/L	34		25SW-02	13	16			5.7	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	16			2.8	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	16			2.8	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	16			1.4	U
PFOS + PFOA Summation	NG/L	173		25SW-02	9	9				

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
results. Sample duplicate pairs have not been averaged.
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for details.
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if
U = non-detect, i.e. not detected at or above this value. J- = The result is an estimated
J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to
Criteria that are present.
Levels (MCL). ####

10) Criteria action level source document and web address.
links.
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F7 - SEAD-26, Soil SPLP Leachate Results
Expanded Site Investigation
Seneca Army Depot Activity

						Area	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26
						Loc ID	SB26-13	SB26-14	SB26-14	SB26-15	SB26-16	SB26-16	SB26-17
						Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						Sample ID	26ESI10001	26ESI10007	26ESI10002	26ESI10003	26ESI10006	26ESI10004	26ESI10005
						Sample Depth Interval (FT)	2.5-3	0-2.5	2.5-3	2.5-3	0-2.167	2.5-3	2.5-3
						Sample Date	8/13/2020	8/13/2020	8/13/2020	8/13/2020	8/13/2020	8/13/2020	8/12/2020
						QC Type	SA	SA	SA	SA	SA	SA	SA
						Study ID	PFAS ESI	PFAS ESI	PFAS ESI	PFAS ESI	PFAS ESI	PFAS ESI	PFAS ESI
						Sample Round	3	3	3	3	3	3	3
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)													
6:2 FTS	NG/L	290		SB26-14	2	7	18 U	270 J+	290	19 U	20 U	19 U	19 U
8:2 FTS	NG/L	330	J+	SB26-14	1	7	9.1 U	330 J+	9.6 U	9.6 U	9.8 U	9.7 U	9.6 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	7	9.1 U	9 U	9.6 U	9.6 U	9.8 U	9.7 U	9.6 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	7	9.1 U	9 U	9.6 U	9.6 U	9.8 U	9.7 U	9.6 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	19		SB26-14	4	7	0.91 U	17	19	1.4 J	0.98 U	0.97 U	1.5 J
Perfluorobutyric acid (PFBA)	NG/L	53		SB26-16	7	7	8.3	40	42	20	53	17	7.9
Perfluorodecanesulfonic acid (PFDS)	NG/L	2.3		SB26-14	1	7	1.4 U	2.3	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	54		SB26-14	2	7	0.91 U	54	0.96 U	0.94 J	0.98 U	0.97 U	0.96 U
Perfluorododecanoic acid (PFDoA)	NG/L	0.83	J	SB26-14	1	7	1.4 U	0.83 J	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	25		SB26-14	4	7	0.91 U	23	25	4.1	0.98 U	0.97 U	0.83 J
Perfluoroheptanoic acid (PFHpA)	NG/L	210		SB26-14	7	7	8.5	210	91	27	21	16	9.9
Perfluorohexanesulfonic acid (PFHxS)	NG/L	290		SB26-14	7	7	0.43 J	290	280	49	12	3.2	56
Perfluorohexanoic acid (PFHxA)	NG/L	170		SB26-14	7	7	30	170	150	21	21	11	21
Perfluorononanoic acid (PFNA)	NG/L	39		SB26-14	5	7	1.4 U	39	1.4 U	33	16	2	3.1
Perfluorooctane Sulfonamide (FOSA)	NG/L	4		SB26-14	2	7	2.7 U	4	2.9 U	1.2 J	2.9 U	2.9 U	2.9 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	1,500		SB26-14	7	7	2.2 J	1,500	250	470	15	1.9 J	36
Perfluorooctanoic acid (PFOA)	NG/L	280		SB26-14	7	7	0.8 J	200	280	39	29	18	16
Perfluoropentanoic acid (PFPA)	NG/L	150		SB26-14	7	7	28	150	140	44	84	39	17
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	7	2.7 U	2.7 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	7	2.7 U	2.7 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U
Perfluoroundecanoic acid (PFUnA)	NG/L	8.1		SB26-14	1	7	1.4 U	8.1	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

J+ = The result is an estimated quantity, but the result may be biased high.

Table F8 - SEAD-26, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Ativity

Parameter	Unit	Max Detected Value	Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26
								Loc ID	MW26-12	MW26-12	MW26-13	MW26-13	MW26-14
								Matrix	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER
								Sample ID	26ESI20001	26ESI20031	26ESI20002	26ESI20032	26ESI20003
								Sample Date	5/31/2019	3/25/2021	5/30/2019	3/25/2021	5/31/2019
								QC Type	SA	SA	SA	SA	SA
								Study ID	2019 PFAS ESI	2020 PFAS ESI	2019 PFAS ESI	2020 PFAS ESI	2019 PFAS ESI
								Sample Round		4		4	
									Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)													
6:2 FTS	NG/L	850	MW26-28	14	56				19 U	18 U	8.8 J	11 J	19 U
8:2 FTS	NG/L	660	MW26-28	5	56				9.5 U	9.1 U	9.6 U	8.9 U	9.5 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.5 U	9.1 U	9.6 U	8.9 U	9.5 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.5 U	9.1 U	9.6 U	8.9 U	9.5 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56				0.95 U	0.91 U	1 J	1.1 J	3
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56				1.4 U	1.3 J	63	84	18
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56				1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56				0.95 U	0.91 U	0.96 U	0.89 U	0.95 U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56				1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56				0.95 U	0.91 U	0.96 U	0.89 U	0.95 U
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56				1.4 U	1.4 U	21	22	5.5
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56				0.95 U	1.8 U	11	12	12
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56				0.48 J	0.91 U	69	70	26
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56				1.4 U	1.4 U	1.4 U	0.96 J	1.4 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56				2.9 U	2.7 U	2.9 U	2.7 U	2.9 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12		2.9 U	2.7 U	2.9 U	5	6.2
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24		0.52 J	1.4 U	7.9	10	4.5
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56				0.64 J	0.91 U	120	160	20
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91 J		0	56				2.9 U	2.7 U	2.9 U	2.7 U	2.9 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56				2.9 U	2.7 U	2.9 U	2.7 U	2.9 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56				1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37				3.42 J		10.8		10.7

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified
U = non-detect, i.e. not detected at or above this value. J- = The result is an estimated quantity,
J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not detected:
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the
- Bold Outline values represent a results that is above New York State Maximum ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F8 - SEAD-26, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Ativity

Parameter	Unit	Max Detected Value	Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26
								Loc ID	MW26-14	MW26-15	MW26-15	MW26-16	MW26-16
								Matrix	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER
								Sample ID	26ESI20033	26ESI20004	26ESI20034	26ESI20005	26ESI20007
								Sample Date	3/25/2021	5/31/2019	3/26/2021	5/31/2019	5/31/2019
								QC Type	SA	SA	SA	SA	DU
								Study ID	2020 PFAS ESI	2019 PFAS ESI	2020 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI
								Sample Round	4		4		
									Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)													
6:2 FTS	NG/L	850	MW26-28	14	56				18 U	19 UJ	18 U	29 J	35 J
8:2 FTS	NG/L	660	MW26-28	5	56				9.1 U	9.4 UJ	9.1 U	9.5 U	9.5 UJ
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.1 U	9.4 UJ	9.1 U	9.5 U	9.5 UJ
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.1 U	9.4 UJ	9.1 U	9.5 U	9.5 UJ
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56				1.5 J	0.94 UJ	0.91 U	48	46 J
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56				13	1.4 UJ	1.4 U	220	210 J
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56				1.4 U	1.4 UJ	1.4 U	1.4 U	1.4 UJ
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56				0.91 U	0.94 UJ	0.91 U	0.95 U	0.95 UJ
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56				1.4 U	1.4 UJ	1.4 U	1.4 U	1.4 UJ
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56				0.91 U	0.94 UJ	0.91 U	14	12 J
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56				3.7	1.4 UJ	1.4 U	360	340 J
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56				4.8	0.94 UJ	0.69 J	610	610 J
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56				15	0.94 UJ	0.91 U	650	660 J
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56				1.4 U	1.4 UJ	1.4 U	37	38 J
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56				2.7 U	2.8 UJ	2.7 U	2.8 U	2.8 UJ
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12		2.7 U	2.8 UJ	2.7 U	770	800 J
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24		2.4	0.54 J	1.4 U	330 J+	330 J
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56				14	0.94 UJ	0.91 U	720	720 J
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91 J		0	56				2.7 U	2.8 UJ	2.7 U	2.8 U	2.8 UJ
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56				2.7 U	2.8 UJ	2.7 U	2.8 U	2.8 UJ
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56				1.4 U	1.4 UJ	1.4 U	1.4 U	1.4 UJ
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37					3.34 J		1,100 J	1,130 J

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for
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J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not detected:
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the
- Bold Outline values represent a results that is above New York State Maximum ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F8 - SEAD-26, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Ativity

Parameter	Unit	Max Detected Value	Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard									
Area								SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26	
Loc ID								MW26-16		MW26-17		MW26-17		MW26-17		MW26-18	
Matrix								GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
Sample ID								26ESI20035		26ESI20006		26ESI20036		26ESI20058		26ESI20008	
Sample Date								3/29/2021		5/31/2019		3/29/2021		3/29/2021		10/17/2019	
QC Type								SA		SA		SA		DU		SA	
Study ID								2020 PFAS ESI		2019 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2019 PFAS ESI	
Sample Round								4				4		4		2	
Per- and polyfluoroalkyl substances (PFAS)								Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
6:2 FTS	NG/L	850	MW26-28	14	56			44		19	U	19	U	17	U	12	J
8:2 FTS	NG/L	660	MW26-28	5	56			9.6	U	9.5	U	9.3	U	8.6	U	9.8	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56			9.6	U	9.5	U	9.3	U	8.6	U	9.8	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56			9.6	U	9.5	U	9.3	U	8.6	U	9.8	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56			56		0.56	J	0.93	U	0.86	U	3.8	
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56			280		33		3.7		3.6		54	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56			1.4	U	1.4	U	1.4	U	1.3	U	1.5	U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56			0.97	J	0.95	U	0.93	U	0.86	U	0.98	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56			1.4	U	1.4	U	1.4	U	1.3	U	1.5	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56			17		0.95	U	0.93	U	0.86	U	0.98	U
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56			540		15		3.6		3.1		28	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56			840		0.95	U	0.61	J	1	J	20	
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56			800		83		7.8		9.3		69	
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56			46		1.4	U	1.4	U	1.3	U	0.61	J
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56			2.9	U	2.8	U	2.8	U	2.6	U	2.9	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12	690		2.8	U	1.2	J	2.6	U	11	
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24	400		3.7		1.4	J	1.5	J	18	
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56			1,000		130		9.2		9.7		130	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91	J	0	56			2.9	U	2.8	U	2.8	U	2.6	U	2.9	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56			2.9	U	2.8	U	2.8	U	2.6	U	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56			1.4	U	1.4	U	1.4	U	1.3	U	1.5	U
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37					6.5						29	

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified
U = non-detect, i.e. not detected at or above this value. J- = The result is an estimated quantity,
J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not detected:
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain
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10) Criteria action level source document and web address.
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Table F8 - SEAD-26, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Ativity

Parameter	Unit	Max Detected Value	Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26
								Loc ID	MW26-18	MW26-19	MW26-19	MW26-20	MW26-20
								Matrix	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER
								Sample ID	26ESI20037	26ESI20013	26ESI20038	26ESI20010	26ESI20012
								Sample Date	3/29/2021	8/21/2020	3/29/2021	10/18/2019	10/18/2019
								QC Type	SA	SA	SA	SA	DU
								Study ID	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI
								Sample Round	4	3	4	2	2
Per- and polyfluoroalkyl substances (PFAS)									Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
6:2 FTS	NG/L	850	MW26-28	14	56				18 U	19 U	19 U	19 U	20 U
8:2 FTS	NG/L	660	MW26-28	5	56				8.9 U	9.3 U	9.6 U	9.7 U	9.9 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				8.9 U	9.3 U	9.6 U	9.7 U	9.9 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				8.9 U	9.3 UJ	9.6 U	9.7 U	9.9 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56				1.1 J	0.93 U	0.96 U	23	24
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56				11	6	3.8	160	160
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56				1.3 U	1.4 U	1.4 U	1.5 U	1.5 U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56				0.89 U	0.93 U	0.96 U	0.97 U	0.99 U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56				1.3 U	1.4 U	1.4 U	1.5 U	1.5 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56				0.89 U	0.93 U	0.96 U	0.47 J	0.59 J
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56				7.8	1.6 J	1.6 J	74	77
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56				6.1	0.91 J	1.9	120	120
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56				17	4.6	2.9 J	240	250
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56				1.3 U	1.4 U	1.4 U	1.5 U	1.5 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56				2.7 U	1.5 J	2.9 U	2.9 U	3 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12		2.6 J	2.8 U	2.9 U	9.5 J	10 J
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24		5	4.5	0.92 J	24	25
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56				23	7.1	3.8	340	350
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91 J		0	56				2.7 U	2.8 U	2.9 U	2.9 U	3 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56				2.7 U	2.8 U	2.9 U	2.9 U	3 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56				1.3 U	1.4 U	1.4 U	1.5 U	1.5 U
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37					7.3		33.5	35

Footnote:
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Table F8 - SEAD-26, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Ativity

Parameter	Unit	Max Detected Value	Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26
								Loc ID	MW26-20	MW26-21	MW26-21	MW26-22	MW26-22
								Matrix	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER
								Sample ID	26ESI20039	26ESI20014	26ESI20040	26ESI20015	26ESI20041
								Sample Date	3/30/2021	6/29/2020	3/26/2021	6/29/2020	3/30/2021
								QC Type	SA	SA	SA	SA	SA
								Study ID	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI
								Sample Round	4	3	4	3	4
Per- and polyfluoroalkyl substances (PFAS)									Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
6:2 FTS	NG/L	850	MW26-28	14	56				19 U	18 U	18 U	18 U	17 U
8:2 FTS	NG/L	660	MW26-28	5	56				9.5 U	8.9 U	8.8 U	9 U	8.3 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.5 U	8.9 U	8.8 U	9 U	8.3 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.5 U	8.9 U	8.8 U	9 U	8.3 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56				9.4	0.41 J	0.88 U	0.9 U	0.83 U
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56				23	5	1.3 U	1.8 U	1.2 U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56				1.4 U	1.3 U	1.3 U	1.4 U	1.2 U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56				0.95 U	0.89 U	0.88 U	0.9 U	0.83 U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56				1.4 U	1.3 U	1.3 U	1.4 U	1.2 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56				0.95 U	0.89 U	0.88 U	0.9 U	0.83 U
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56				26	1.3 U	1.3 U	1.4 U	1.2 U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56				45	1.8 U	0.88 U	0.9 U	0.83 U
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56				81	1.8 U	0.88 U	0.9 U	0.83 U
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56				1.4 U	1.3 U	1.3 U	1.4 U	1.2 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56				2.8 U	2.7 U	2.6 U	2.7 U	2.5 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12		3.8 J	2.7 U	2.6 U	2.7 U	2.5 U
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24		8.6	1.3 U	1.3 U	1.4 U	1.2 U
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56				84	1.4 J	0.88 U	0.9 U	0.83 U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91	J	0	56				2.8 U	2.7 U	2.6 U	2.7 UJ	2.5 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56				2.8 U	2.7 U	2.6 U	2.7 U	2.5 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56				1.4 U	1.3 U	1.3 U	1.4 U	1.2 U
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37					4 U		4.1 U	

Footnote:
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Table F8 - SEAD-26, Groundwater Results
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Seneca Army Depot Ativity

							Area	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26
							Loc ID	MW26-23	MW26-23	MW26-23	MW26-23D	MW26-23D
							Matrix	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER
							Sample ID	26ESI20016	26ESI20042	26ESI20057	26ESI20017	26ESI20043
							Sample Date	8/31/2020	3/26/2021	3/26/2021	8/31/2020	3/31/2021
							QC Type	SA	SA	DU	SA	SA
							Study ID	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI
							Sample Round	3	4	4	3	4
Parameter	**Unit**	**Max Detected Value**	**Max Detected Loc ID**	**Num of Detects**	**Num of Analyses**	**Action Level**	**Detects Above Standard**	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)												
6:2 FTS	NG/L	850	MW26-28	14	56			18 U	18 U	18 U	16 U	18 U
8:2 FTS	NG/L	660	MW26-28	5	56			9 U	9.2 U	8.8 U	8.2 U	9 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56			9 U	9.2 U	8.8 U	8.2 U	9 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56			9 U	9.2 U	8.8 U	8.2 U	9 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56			12	1.2 J	1 J	0.82 U	0.9 U
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56			51	13	11	4.3	5.3
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56			1.3 U	1.4 U	1.3 U	1.2 U	1.3 U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56			0.9 U	0.92 U	0.88 U	0.82 U	0.9 U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56			1.3 U	1.4 U	1.3 U	1.2 U	1.3 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56			0.9 U	0.92 U	0.88 U	0.82 U	0.9 U
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56			19	2	2.1	1.2 U	1.3 U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56			28	2.8	2.4	0.82 U	0.9 U
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56			86	6.9	8.2	1.6 U	0.9 U
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56			1.3 U	1.4 U	1.3 U	1.2 U	1.3 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56			2.7 U	2.7 U	2.7 U	2.5 U	2.7 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12	3.6 U	2.7 U	2.7 U	2.5 U	2.7 U
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24	11	1.5 J	1.5 J	1.2 U	1.3 U
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56			110	9.6	11	3.6	4.8
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91 J		0	56			2.7 U	2.7 U	2.7 U	2.5 U	2.7 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56			2.7 U	2.7 U	2.7 U	2.5 U	2.7 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56			1.3 U	1.4 U	1.3 U	1.2 U	1.3 U
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37			14.6			3.7 U	

Footnote:
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Table F8 - SEAD-26, Groundwater Results
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Parameter	Unit	Max Detected Value	Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26
								Loc ID	MW26-24	MW26-24	MW26-25	MW26-25	MW26-26
								Matrix	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER
								Sample ID	26ESI20018	26ESI20044	26ESI20019	26ESI20045	26ESI20020
								Sample Date	9/1/2020	3/25/2021	9/1/2020	3/25/2021	8/14/2020
								QC Type	SA	SA	SA	SA	SA
								Study ID	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI
								Sample Round	3	4	3	4	3
									Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)													
6:2 FTS	NG/L	850	MW26-28	14	56				18 U	19 U	16 U	19 U	18 U
8:2 FTS	NG/L	660	MW26-28	5	56				9.1 U	9.6 U	8.1 U	9.4 U	9.1 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.1 U	9.6 U	8.1 U	9.4 U	9.1 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.1 U	9.6 U	8.1 U	9.4 U	9.1 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56				0.91 U	0.96 U	0.81 U	0.94 U	0.91 U
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56				1.4 U	2	1.2 J	1.4 U	32
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56				1.4 U	1.4 U	1.2 U	1.4 U	1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56				0.91 U	0.96 U	0.81 U	0.94 U	0.91 U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56				1.4 U	1.4 U	1.2 U	1.4 U	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56				0.91 U	0.96 U	0.81 U	0.94 U	0.91 U
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56				1.4 U	1.4 U	1.2 U	1.4 U	3.6
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56				0.91 U	1.9 U	0.38 J	1.9 U	0.91 U
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56				0.91 U	0.78 J	0.81 U	0.94 U	16
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56				1.4 U	1.4 U	1.2 U	1.4 U	1.4 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56				2.7 U	2.9 U	2.4 U	2.8 U	2.7 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12		2.7 U	2.9 U	2.4 U	2.8 U	2.7 U
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24		1.4 U	1.4 U	1.2 U	1.4 U	1 J
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56				0.91 U	0.53 J	1.6 U	0.94 U	61
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91	J	0	56				2.7 U	2.9 U	2.4 U	2.8 U	2.7 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56				2.7 U	2.9 U	2.4 U	2.8 U	2.7 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56				1.4 U	1.4 U	1.2 U	1.4 U	1.4 U
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37				4.1 U		3.6 U		3.7 J

Footnote:
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5) Bold chemical dectection
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Table F8 - SEAD-26, Groundwater Results
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Parameter	Unit	Max Detected Value	Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26
								Loc ID	MW26-26	MW26-27	MW26-27	MW26-28	MW26-28
								Matrix	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER
								Sample ID	26ESI20046	26ESI20021	26ESI20047	26ESI20022	26ESI20030
								Sample Date	3/25/2021	8/21/2020	3/26/2021	8/17/2020	8/17/2020
								QC Type	SA	SA	SA	SA	DU
								Study ID	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI
								Sample Round	4	3	4	3	3
									Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)													
6:2 FTS	NG/L	850	MW26-28	14	56				410	19 U	18 U	400	420
8:2 FTS	NG/L	660	MW26-28	5	56				48 J+	9.5 U	9 U	600	570
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.3 U	9.5 U	9 U	8.9 U	9.1 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.3 U	9.5 U	9 U	8.9 U	9.1 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56				1.6 J	0.52 J	8.9	52	50
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56				310	53	200	260	260
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56				1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56				0.93 U	0.95 U	0.9 U	7	7.5
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56				1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56				0.93 U	0.95 U	0.9 U	35	36
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56				340	1.2 J	50	580	560
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56				20	0.61 J	31	900	910
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56				550	15	220	880	850
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56				27	1.4 U	0.71 J	50	48
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56				2.8 U	2.9 U	2.7 U	15	15
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12		5.5	1.7 J	2.2 J	2,300	2,300
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24		190	2.7	20	540	530
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56				940	58	390	920	900
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91 J		0	56				2.8 U	2.9 U	2.7 U	2.7 U	2.7 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56				2.8 U	2.9 U	2.7 U	2.7 U	2.7 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56				1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37					4.4		2,840	2,830

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Table F8 - SEAD-26, Groundwater Results
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							Area	SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26	
							Loc ID	MW26-28		MW26-28		MW26-28D-DN		MW26-28D-DN		MW26-28D-UP	
							Matrix	GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
							Sample ID	26ESI20048		26ESI20056		26ESI20024		26ESI20050		26ESI20023	
							Sample Date	3/25/2021		3/25/2021		8/18/2020		3/31/2021		8/18/2020	
							QC Type	SA		DU		SA		SA		SA	
							Study ID	2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI	
							Sample Round	4		4		3		4		3	
Parameter	**Unit**	**Max Detected Value**	**Max Detected Loc ID**	**Num of Detects**	**Num of Analyses**	**Action Level**	**Detects Above Standard**	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																	
6:2 FTS	NG/L	850	MW26-28	14	56			760		850		18	UJ	18	U	18	U
8:2 FTS	NG/L	660	MW26-28	5	56			480		660		9.1	UJ	9.1	U	9.1	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56			9.1	U	9.3	U	9.1	UJ	9.1	U	9.1	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56			9.1	U	9.3	U	9.1	UJ	9.1	U	9.1	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56			170		160		0.91	UJ	0.91	U	0.91	U
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56			670		700		1.3	J	2.8	U	1.1	J
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56			1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56			6.8		6.8		0.91	UJ	0.91	U	0.91	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56			1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56			51		56		0.91	UJ	0.91	U	0.91	U
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56			1,300		1,400		1.4	UJ	1.4	U	1.4	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56			2,200		2,200		1.8	UJ	0.91	U	1.8	U
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56			2,200		2,400		0.91	UJ	0.91	U	0.91	U
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56			75		68		1.4	UJ	1.4	U	1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56			7.1		6.9		2.7	UJ	1.5	J	2.7	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12	2,400		2,500		2.7	UJ	2.7	U	2.7	U
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24	1,100		1,300		1.4	UJ	1.4	U	1.4	U
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56			2,700		2,300		1.8	UJ	1.4	J	1.8	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91	J	0	56			2.7	U	2.8	U	2.7	UJ	2.7	U	2.7	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56			2.7	U	2.8	U	2.7	UJ	2.7	U	2.7	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56			1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	U
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37							4.1	U			4.1	U

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Table F8 - SEAD-26, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Ativity

Parameter	Unit	Max Detected Value	Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	Loc ID	Matrix	Sample ID	Sample Date	QC Type	Study ID	Sample Round	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
								SEAD-26	MW26-28D-UP	GROUNDWATER	26ESI20049	3/31/2021	SA	2020 PFAS ESI	4					
								SEAD-26	MW26-29	GROUNDWATER	26ESI20025	8/14/2020	SA	2020 PFAS ESI	3					
								SEAD-26	MW26-29	GROUNDWATER	26ESI20051	3/25/2021	SA	2020 PFAS ESI	4					
								SEAD-26	MW26-30	GROUNDWATER	26ESI20026	8/18/2020	SA	2020 PFAS ESI	3					
								SEAD-26	MW26-30	GROUNDWATER	26ESI20052	3/25/2021	SA	2020 PFAS ESI	4					
Per- and polyfluoroalkyl substances (PFAS)																				
6:2 FTS	NG/L	850	MW26-28	14	56											18 U	19 U	20 J	18 U	18 U
8:2 FTS	NG/L	660	MW26-28	5	56											9.2 U	9.4 U	9.2 U	8.8 U	9 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56											9.2 U	9.4 U	9.2 U	8.8 U	9 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56											9.2 U	9.4 U	9.2 U	8.8 U	9 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56											0.92 U	1.3 J	5.5	18	60
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56											3.4	19	66	86	100
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56											1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56											0.92 U	0.94 U	0.92 U	0.88 U	0.9 U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56											1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56											0.92 U	0.94 U	0.92 U	0.47 JN	3.1
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56											1.4 U	17	85	65	180
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56											1.8 U	5	21	190	1,100
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56											0.88 J	51	230	190	420
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56											1.4 U	1.4 U	1.4 U	0.5 J	3
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56											2.8 U	2.8 U	2.8 U	2.7 U	2.7 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12									2.8 U	2.8 U	1 J	9.7	110
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24									1.4 U	8.2	25	37	130
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56											1.4 J	56	220	160	280
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91	J	0	56											2.8 U	2.8 U	2.8 U	2.7 U	2.7 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56											2.8 U	2.8 U	2.8 U	2.7 U	2.7 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56											1.4 U	1.4 U	1.4 U	1.3 U	1.4 U
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37												11		46.7	

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Table F8 - SEAD-26, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Ativity

Parameter	Unit	Max Detected Value	Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26
								Loc ID	MW26-31	MW26-31	MW26-32D-DN	MW26-32D-DN	MW26-32D-UP
								Matrix	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER
								Sample ID	26ESI20027	26ESI20053	26ESI20029	26ESI20055	26ESI20028
								Sample Date	8/18/2020	3/29/2021	8/19/2020	4/2/2021	8/18/2020
								QC Type	SA	SA	SA	SA	SA
								Study ID	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI
								Sample Round	3	4	3	4	3
Per- and polyfluoroalkyl substances (PFAS)									Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
6:2 FTS	NG/L	850	MW26-28	14	56				9.2 J	11 J	18 U	18 U	18 U
8:2 FTS	NG/L	660	MW26-28	5	56				9.3 U	8.9 U	9 U	8.9 U	8.8 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.3 U	8.9 U	9 U	8.9 U	8.8 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56				9.3 U	8.9 U	9 U	8.9 U	8.8 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56				5.8	10	0.9 U	0.89 U	0.88 U
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56				61	48	1.3 U	1.3 U	1.3 U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56				1.4 U	1.3 U	1.3 U	1.3 U	1.3 U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56				0.93 U	0.89 U	0.9 U	0.89 U	0.88 U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56				1.4 U	1.3 U	1.3 U	1.3 U	1.3 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56				0.93 U	0.46 J	0.9 U	0.89 U	0.88 U
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56				47	75	1.3 U	1.3 U	1.3 U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56				52	98	0.9 U	0.89 U	0.88 U
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56				120	150	0.9 U	0.89 U	0.88 U
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56				1.4 U	1.2 J	1.3 U	1.3 U	1.3 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56				2.8 U	2.7 U	2.7 U	2.7 U	2.6 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12		7.3	17	2.7 U	2.7 U	2.6 U
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24		41	77	1.3 U	1.3 U	1.3 U
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56				120	140	0.9 U	0.89 U	1.8 U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91	J	0	56				2.8 U	2.7 U	2.7 U	2.7 U	2.6 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56				2.8 U	2.7 U	2.7 U	2.7 U	2.6 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56				1.4 U	1.3 U	1.3 U	1.3 U	1.3 U
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37				48.3		4 U		3.9 U

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Table F8 - SEAD-26, Groundwater Results
Expanded Site Investigation
Seneca Army Depot Ativity

							Area	SEAD-26
							Loc ID	MW26-32D-UP
							Matrix	GROUNDWATER
							Sample ID	26ESI20054
							Sample Date	3/31/2021
							QC Type	SA
							Study ID	2020 PFAS ESI
							Sample Round	4
Parameter	**Unit**	**Max Detected Value**	**Max Detected Loc ID**	**Num of Detects**	**Num of Analyses**	**Action Level**	**Detects Above Standard**	Value Qual
Per- and polyfluoroalkyl substances (PFAS)								
6:2 FTS	NG/L	850	MW26-28	14	56			19 U
8:2 FTS	NG/L	660	MW26-28	5	56			9.3 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56			9.3 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	56			9.3 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	170	MW26-28	30	56			0.93 U
Perfluorobutyric acid (PFBA)	NG/L	700	MW26-28	43	56			1.4 U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	56			1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	5	56			0.93 U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	56			1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	56	MW26-28	12	56			0.93 U
Perfluoroheptanoic acid (PFHpA)	NG/L	1,400	MW26-28	34	56			1.4 U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	2,200	MW26-28 MW26-28	34	56			0.93 U
Perfluorohexanoic acid (PFHxA)	NG/L	2,400	MW26-28	37	56			0.93 U
Perfluorononanoic acid (PFNA)	NG/L	93	TMW-26-3	14	56			1.4 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28 MW26-28	6	56			2.8 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,500	MW26-28	23	56	10	12	2.8 U
Perfluorooctanoic acid (PFOA)	NG/L	1,300	MW26-28	36	56	10	24	1.4 U
Perfluoropentanoic acid (PFPA)	NG/L	2,700	MW26-28	41	56			0.93 U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.91 J		0	56			2.8 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	56			2.8 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	56			1.4 U
PFOS + PFOA Summation	NG/L	2,840	MW26-28	28	37			

Footnote:
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2) Number of Analyses is the number of detected and non-detected results excluding
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4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for
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Table F9 - SEAD-26, Surface Water Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26	
									Loc ID	SW26-01		SW26-02		SW26-03		SW26-03		SW26-03	
									Matrix	SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
									Sample ID	26ESI30010		26ESI30011		26ESI30003		26ESI30001		26ESI30012	
									Sample Date	3/24/2021		3/24/2021		8/21/2020		3/30/2021		3/30/2021	
									QC Type	SA		SA		SA		SA		DU	
									Study ID	2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI		2020 PFAS ESI	
									Sample Round	4		4		3		4		4	
Per- and polyfluoroalkyl substances (PFAS)										Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
6:2 FTS	NG/L	310		SW26-02	1	12				20	U	310		18	U	17	U	18	U
8:2 FTS	NG/L	48		SW26-02	1	12				10	U	48		8.9	U	8.5	U	8.8	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	12				10	U	10	U	8.9	U	8.5	U	8.8	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	12				10	U	10	U	8.9	U	8.5	U	8.8	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	91		SW26-02	10	12				5.9		91		0.47	J	0.85	U	0.88	U
Perfluorobutyric acid (PFBA)	NG/L	340		SW26-02	12	12				11		340		3.5		2		2.1	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0.8	J	SW26-02	1	12				1.5	U	0.8	J	1.3	U	1.3	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	7.6		SW26-02	1	12				1	U	7.6		0.89	U	0.85	U	0.88	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	12				1.5	U	1.5	U	1.3	U	1.3	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	30		SW26-02	1	12				1	U	30		0.89	U	0.85	U	0.88	U
Perfluoroheptanoic acid (PFHpA)	NG/L	710		SW26-02	11	12				27		710		1.3	U	1.9		2.2	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	1,200		SW26-02	12	12				100		1,200		1.6	J	3.9		3.8	
Perfluorohexanoic acid (PFHxA)	NG/L	1,100		SW26-02	11	12				45		1,100		1.8	U	3.3		2.7	
Perfluorononanoic acid (PFNA)	NG/L	82		SW26-02	5	12				1.1	J	82		1.3	U	1.3	U	1.3	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	2.3	J	SW26-02	1	12				3	U	2.3	J	2.7	U	2.5	U	2.6	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,100		SW26-02	12	12	10	2		18		2,100		3.3	J	1.6	J	1.7	J
Perfluorooctanoic acid (PFOA)	NG/L	650		SW26-02	12	12	10	2		28		650		0.93	J	2.2		2.7	
Perfluoropentanoic acid (PFPA)	NG/L	1,400		SW26-02	11	12				32		1,400		1.8	U	3.4		2.9	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	12				3	U	3	U	2.7	U	2.5	U	2.6	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	12				3	U	3	U	2.7	U	2.5	U	2.6	U
Perfluoroundecanoic acid (PFUnA)	NG/L	2		SW26-02	1	12				1.5	U	2		1.3	U	1.3	U	1.3	U
PFOS + PFOA Summation	NG/L	8.5		SW26-06	5	5								4.23	J				

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding rejected
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if
U = non-detect, i.e. not detected at or above this value. J- = The result is an estimated quantity, but
J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not detected:
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria
- Bold Outline values represent a results that is above New York State Maximum Contaminant ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F9 - SEAD-26, Surface Water Results
Expanded Site Investigation
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Num of Detects	Num of Analyses	Action Level	Detects Above Standard	Area	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26
									Loc ID	SW26-04	SW26-04	SW26-04	SW26-05	SW26-05
									Matrix	SURFACE WATER	SURFACE WATER	SURFACE WATER	SURFACE WATER	SURFACE WATER
									Sample ID	26ESI30004	26ESI30005	26ESI30002	26ESI30006	26ESI30008
									Sample Date	8/25/2020	8/25/2020	3/30/2021	8/28/2020	3/30/2021
									QC Type	SA	DU	SA	SA	SA
									Study ID	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI	2020 PFAS ESI
									Sample Round	3	3	4	3	4
										Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	310		SW26-02	1	12				18 U	17 U	18 U	19 U	18 U
8:2 FTS	NG/L	48		SW26-02	1	12				8.9 U	8.7 U	8.9 U	9.4 U	8.9 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	12				8.9 U	8.7 U	8.9 U	9.4 U	8.9 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	12				8.9 U	8.7 U	8.9 U	9.4 U	8.9 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	91		SW26-02	10	12				0.96 J	1.3 J	4.1	1.5 J	2.7
Perfluorobutyric acid (PFBA)	NG/L	340		SW26-02	12	12				6.6	6.8	4.9	13	5.4
Perfluorodecanesulfonic acid (PFDS)	NG/L	0.8	J	SW26-02	1	12				1.3 U	1.3 U	1.3 U	1.4 U	1.3 U
Perfluorodecanoic acid (PFDA)	NG/L	7.6		SW26-02	1	12				0.89 U	0.87 U	0.89 U	0.94 U	0.89 U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	12				1.3 U	1.3 U	1.3 U	1.4 U	1.3 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	30		SW26-02	1	12				0.89 U	0.87 U	0.89 U	0.94 U	0.89 U
Perfluoroheptanoic acid (PFHpA)	NG/L	710		SW26-02	11	12				2.1	2.4	6.8	3.5	5.7
Perfluorohexanesulfonic acid (PFHxS)	NG/L	1,200		SW26-02	12	12				4.6	5.2	24	3.8	21
Perfluorohexanoic acid (PFHxA)	NG/L	1,100		SW26-02	11	12				3.6	4.3	13	6.3	9.3
Perfluorononanoic acid (PFNA)	NG/L	82		SW26-02	5	12				1.3 U	0.52 JN	1.3 U	0.56 J	1.3 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	2.3	J	SW26-02	1	12				2.7 U	2.6 U	2.7 U	2.8 U	2.7 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,100		SW26-02	12	12	10	2		2.7 J	4.6	7	4.8	6.2
Perfluorooctanoic acid (PFOA)	NG/L	650		SW26-02	12	12	10	2		2.2	2.5	4.4	3.2	3.9
Perfluoropentanoic acid (PFPA)	NG/L	1,400		SW26-02	11	12				4	4.4	12	7.5	10
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	12				2.7 UJ	2.6 UJ	2.7 U	2.8 UJ	2.7 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	12				2.7 U	2.6 U	2.7 U	2.8 U	2.7 U
Perfluoroundecanoic acid (PFUnA)	NG/L	2		SW26-02	1	12				1.3 U	1.3 U	1.3 U	1.4 U	1.3 U
PFOS + PFOA Summation	NG/L	8.5		SW26-06	5	5				4.9	7.1		8	

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding rejected
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if
U = non-detect, i.e. not detected at or above this value. J- = The result is an estimated quantity, but
J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not detected:
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria
- Bold Outline values represent a results that is above New York State Maximum Contaminant ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

Table F9 - SEAD-26, Surface Water Results
Expanded Site Investigation
Seneca Army Depot Activity

								Area	SEAD-26		SEAD-26	
								Loc ID	SW26-06		SW26-06	
								Matrix	SURFACE WATER		SURFACE WATER	
								Sample ID	26ESI30007		26ESI30009	
								Sample Date	8/28/2020		3/30/2021	
								QC Type	SA		SA	
								Study ID	2020 PFAS ESI		2020 PFAS ESI	
								Sample Round	3		4	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Num of Detects**	**Num of Analyses**	**Action Level**	**Detects Above Standard**	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)												
6:2 FTS	NG/L	310		SW26-02	1	12			18	U	17	U
8:2 FTS	NG/L	48		SW26-02	1	12			9	U	8.3	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	12			9	U	8.3	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	12			9	U	8.3	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	91		SW26-02	10	12			1.4	J	1.7	
Perfluorobutyric acid (PFBA)	NG/L	340		SW26-02	12	12			12	J-	3.5	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0.8	J	SW26-02	1	12			1.3	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	7.6		SW26-02	1	12			0.9	U	0.83	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	12			1.3	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	30		SW26-02	1	12			0.9	U	0.83	U
Perfluoroheptanoic acid (PFHpA)	NG/L	710		SW26-02	11	12			3.4		4.1	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	1,200		SW26-02	12	12			4.2		14	
Perfluorohexanoic acid (PFHxA)	NG/L	1,100		SW26-02	11	12			6.4		7.6	
Perfluorononanoic acid (PFNA)	NG/L	82		SW26-02	5	12			0.6	J	1.3	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	2.3	J	SW26-02	1	12			2.7	U	2.5	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,100		SW26-02	12	12	10	2	5.8		5.1	
Perfluorooctanoic acid (PFOA)	NG/L	650		SW26-02	12	12	10	2	2.7		3.3	
Perfluoropentanoic acid (PFPA)	NG/L	1,400		SW26-02	11	12			7.2		7.6	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	12			2.7	UJ	2.5	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	12			2.7	U	2.5	U
Perfluoroundecanoic acid (PFUnA)	NG/L	2		SW26-02	1	12			1.3	U	1.3	U
PFOS + PFOA Summation	NG/L	8.5		SW26-06	5	5			8.5			

Footnote:
1) All historical data collected prior to 2013 are reported as provided by others.
2) Number of Analyses is the number of detected and non-detected results excluding rejected
3) NLE = no limit established.
4) ND = not detected in any background sample, no background concentration available.
5) Bold chemical dectection
6) SS = Site Specific action level, see "Specific Chemical Class (or Parameter)" footnote for
7) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if
U = non-detect, i.e. not detected at or above this value. J- = The result is an estimated quantity, but
J+ = The result is an estimated quantity, but the result may be biased high. UJ=The compound was not detected:
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain
8) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action
9) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria
- Bold Outline values represent a results that is above New York State Maximum Contaminant ####

10) Criteria action level source document and web address.
- The New York State Maximum Contaminant Levels (MCL) values were obtained from the
https://www.health.ny.gov/environmental/water/drinking/docs/water_supplier_fact_sheet_new_mcls.pdf

APPENDIX G Laboratory Reports

Provided as separate electronic files.

APPENDIX H Data Validation

Round 1 Data Validation

PROJECT NAME/NO. USACE - Seneca Army Depot SEAD-25, SEAD-26, and Fire House PFAS
LAB: TestAmerica (TA) - West Sacramento
SDG: 320-50187-1, 320-50432-1, 320-50480-1, 320-50662-1, 320-50873-1, and 320-50976-1
FRACTION: PFAS (QSM 5.1)
MEDIA: GROUNDWATER
NUMBER OF SAMPLES: 52 including field QC

CRITERIA	Did Analyses Meet all criteria as specified in the SOPs?	Acceptable limits / criteria	Comments/Qualifying Actions	Qualifiers Added?
Data Completeness, Holding Times, & Preservation	No	Cooler temp < 4±2ºC. Samples meet method holding time requirement for extraction < 14 days and analysis < 28 days.	Coolers were received at 0.6-10.8°C on 5/9/19, 5/11/19, 5/18/19, 5/25/19, and 6/4/19 by the laboratory. Samples 25ESI20008, 25ESI00008, 26ESI20004, 26ESI01002, 26ESI20007, 25ESI20002, and 26ESI00006 were considered estimated with positive results qualified "J" and nondetected results qualified "UJ" based upon sample receipt temperature of 10.8°C. All samples were received in good condition based on the laboratory login report. The samples were extracted within 14 days from sample collection with the exception of sample FHESI00001 and the reextracted PFBA result for sample FHESI00004. Results for these samples were considered estimated with positive results qualified "J" and nondetected results qualified "UJ".	Yes
Surrogate Recoveries	No	Recoveries within 50 - 150%	All surrogate recoveries were within QC limits with the exception of the low recoveries for 13C4-PFBA in sample FHESI20004 (49%R); d5-NEtFOSAA in sample 25ESI20002 (46%R); and 13C2-PFTeDA in sample 25ESI20002 (39%R). Therefore, associated results were considered estimated, possibly biased low, with positive results qualified "J-" and nondetected results qualified "UJ" for the affected samples.	Yes
Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)	Yes	Recoveries within limits (70 - 130%) and RPD≤30% or laboratory established limits	All LCS/LCSD recoveries and RPDs within lab QC limits.	No
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	No	MS/MSD: 1 per 20 project samples. Recoveries within lab limits (or 70-130%). RPD < lab limit.	Samples FHESI20001, 25ESI20003, 26ESI20004, and 25ESI30003 were used for the MS/MSDs for this project. All precision and accuracy measurements were within QC limits with the exception of the low MSD accuracy result for PFPeA (64%R; QC limit 82-115%R) associated with 25ESI20003; and the low MS accuracy result for PFOS (68%R; QC limit 77-114%R) and the high MSD accuracy result for PFHxS (111%R; QC limit 79-108%R) associated with 25ESI30003. Validation qualification was not required.	No
Blanks	No	Method blanks: 1 per batch. No PFAS detected in MB, TB, EB, or FB (QAPP: No PFAS > 1/2 LOQ).	PFAS were not detected greater than 1/2 LOQ in associated laboratory method blanks, field QC equipment blanks (25ESI00001, 25ESI00002, 25ESI00003, 25ESI00004, 25ESI00005, 25ESI00006, 25ESI00007, 25ESI00008, 25ESI00009, FHESI00001, FHESI00002, FHESI00003, FHESI00004, FHESI00005, FHESI00006, 26ESI00001, 26ESI00002, 26ESI00003, 26ESI00004, 26ESI00005, and 26ESI00006), QC trip blanks (25ESI00101, 25ESI00102, FHESI00101, 26ESI00101, and 26ESI00102), or field blanks (25ESI01001, 25ESI01002, 26ESI01001, and 26ESI01002) with the exception of the following: the laboratory method blank associated with all samples in SDG 320-50873-1 with the exception of 25ESI20002, 26ESI20006, 26ESI00006, 26ESI00101, and 26ESI00102 contained PFUnA, PFDA, and PFTriA at concentrations of 1.06, 7.46, and 4.08 ng/L, respectively; the equipment blanks and field blanks associated with samples in SDG 320-50873-1 contained PFBA at concentrations of 1.7, 1.9, 2.9, and 3.4 ng/L; the field blank associated with samples collected on 5/31/19 contained PFHxS and PFOS at concentrations of 1.7 and 3.0 ng/L, respectively; and the equipment blank associated with samples collected on 6/3/19 contained PFOS at a concentration of 12 ng/L. Therefore, results for these compounds less than validation action concentrations were considered not detected and qualified "U" for the affected samples.	Yes
LC/MS/MS Tune Check	Yes	Mass assignments of tuning standard within 0.5 ± amu	The first level standard from the initial calibration curve was used to evaluate tune criteria.	No
PFAS Analytes	No	Recalculate 10% sample results	Many sample results exceeded instrument calibration ranges and samples were reanalyzed at a dilution. Diluted sample results were reported. It was noted that PFOA, PFHxS, and PFHxA exceeded instrument calibration ranges in sample FHESI20001. These results were considered estimated and qualified "J" for the affected sample. 10% sample results were recalculated from raw data for verification.	Yes
Reported Detection Limits	Yes	Detection limits adjusted to reflect sample dilutions. Nondetected results reported at LOD.	Detection limit criteria met. Results detected between method detection limit (MDL) and LOQ reported by lab with a "J" qualifier.	No
LC/MS/MS Initial Calibration	Yes	ICAL %RSD ≤ 20% ICV %D ≤ ±30%	All initial calibration criteria were met.	No
LC/MS/MS Continuing Calibration	Yes	CCV performed for every 10 samples. %D ≤ ±30%.	All continuing calibration criteria were met.	No
Internal Standards	No	IS recoveries within 50-150%; RT within ± 0.02 minutes	All IS recoveries within QC limits with the exception of the low IS recovery for 13C2-PFOA in diluted samples 25ESI20003, 26ESI20005, 26ESI20007, and 25ESI20002. Positive PFOA results were considered estimated, possibly biased high, and qualified "J+" while nondetected results were considered estimated and qualified "UJ" for the diluted samples.	Yes
Field Duplicate Precision	Yes	All % RPD ≤ 30%	Samples FHESI20004, 25ESI20007, 25ESI20008, 26ESI20007, and 25ESI30003 were collected as the field duplicate samples of FHESI20002, 25ESI20001, 25ESI20004, 26ESI20005, and 25ESI30002, respectively. %RPDs were within the required limit.	No

Round 2 Data Validation

PROJECT NAME/NO. USACE - Seneca Army Depot SEAD-25, SEAD-26, and Fire House PFAS
LAB: TestAmerica (TA) - West Sacramento
SDG: 320-54326-1, 320-54377-1, 320-55409-1, and 320-55489-1
FRACTION: PFAS (QSM 5.1)
MEDIA: GROUNDWATER
NUMBER OF SAMPLES: 26 including field QC

CRITERIA	Did Analyses Meet all criteria as specified in the SOPs?	Acceptable limits / criteria	Comments/Qualifying Actions	Qualifiers Added?
Data Completeness, Holding Times, & Preservation	Yes	Cooler temp < 4±2ºC. Samples meet method holding time requirement for extraction < 14 days and analysis < 28 days.	Coolers were received at 2-4.2°C on 9/14/19, 9/17/19, 10/17/19, and 10/19/19 by the laboratory. All samples were received in good condition based on the laboratory login report. The samples were extracted and analyzed within the holding time criteria.	No
Surrogate Recoveries	Yes	Recoveries within 50 - 150%	All sample surrogate recoveries were within QC limits.	No
Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)	No	Recoveries within limits (70 - 130%) and RPD≤30% or laboratory established limits	All LCS/LCSD recoveries and RPDs within lab QC limits with the exception of the high LCS recoveries for NMeFOSAA (118%R; QC limit 77-114%R) and NEtFOSAA (117%R; QC limit 80-116%R) associated with samples collected on 10/16/19. Validation qualification of these samples was not required.	No
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	No	MS/MSD: 1 per 20 project samples. Recoveries within lab limits (or 70-130%). RPD < lab limit.	Samples FHESI20005, 25ESI20011, and 26ESI20010 were used for the MS/MSDs for this project. All precision and accuracy measurements were within QC limits with the exception of the low MSD accuracy result for PFNA (32%R; QC limit 82-118%R) and the high MS/MSD accuracy results for PFHpS (133%R/130%R; QC limit 81-124%R) associated with FHESI20005; the high MS accuracy result for PFHxS (110%R; QC limit 79-108%R) and the high MSD accuracy result for PFOS (115%R; QC limit 77-114%R) associated with sample 26ESI20010; and the high MS accuracy result for PFOS (115%R; QC limit 77-114%R) and the high MSD accuracy result for NEtFOSAA (118%R; QC limit 80-116%R) associated with 25ESI20011. Validation qualification was not required for these parent samples.	No
Blanks	No	Method blanks: 1 per batch. No PFAS detected in MB, TB, EB, or FB (QAPP: No PFAS > 1/2 LOQ).	PFAS were not detected greater than 1/2 LOQ in associated laboratory method blanks, laboratory initial calibration blanks, laboratory continuing calibration blanks, field QC equipment blanks (25ESI00010, 25ESI00011, 25ESI00012, FHESI00007, FHESI00008, 26ESI00007, 26ESI00008, 26ESI00010), QC trip blanks (25ESI00103, FHESI00102), or field blanks (25ESI01003, 26ESI01004, and FHESI01001) with the exception of the following: the equipment blanks and field blanks associated with samples in SDG 320-55489-1 contained PFBA at concentrations of 1.6 and 2.4 ng/L; the field blank associated with SEAD 25 samples collected on 10/17/19 and 10/18/19 contained PFPeA at a concentration of 0.97 ng/L; the equipment blank associated with SEAD 26 samples collected on 10/17/19 and 10/18/19 contained PFOS at a concentration of 4.2 ng/L; and the trip blanks associated with the project samples contained PFBA at concentrations of 1.0 and 26 ng/L. Therefore, results for these compounds less than validation action concentrations were considered not detected and qualified "U" for the affected samples.	Yes
LC/MS/MS Tune Check	Yes	Mass assignments of tuning standard within 0.5 ± amu	The first level standard from the initial calibration curve was used to evaluate tune criteria.	No
PFAS Analytes	No	Recalculate 10% sample results	Many sample results exceeded instrument calibration ranges and samples were reanalyzed at a dilution. Diluted sample results were reported. 10% sample results were recalculated from raw data for verification. It was noted that the ion ratio exceeded QC limits for PFOS in samples 26ESI00010, 26ESI20010, and 26ESI20012. The PFOS results were considered estimated and qualified "J" for the affected samples.	Yes
Reported Detection Limits	Yes	Detection limits adjusted to reflect sample dilutions. Nondetected results reported at LOD.	Detection limit criteria met. Results detected between method detection limit (MDL) and LOQ reported by lab with a "J" qualifier.	No
LC/MS/MS Initial Calibration	Yes	ICAL %RSD ≤ 20% ICV %D ≤ ±30%	All initial calibration criteria were met.	No
LC/MS/MS Continuing Calibration	Yes	CCV performed for every 10 samples. %D ≤ ±30%.	All continuing calibration criteria were met.	No
Internal Standards	No	IS recoveries within 50-150%; RT within ± 0.02 minutes	All IS recoveries within QC limits with the exception of the low IS recovery for 13C2-PFOA in samples FHESI20005, FHESI20007, and FHESI20006. Positive PFOA and PFOS results were considered estimated, possibly biased high, and qualified "J+" for the affected samples.	Yes
Field Duplicate Precision	Yes	All % RPD ≤ 30%	Samples FHESI20007, 25ESI20014, and 26ESI20012 were collected as the field duplicate samples of FHESI20005, 25ESI20011, and 26ESI20010, respectively. %RPDs were within the required limit.	No

Round 3 Data Validation

PROJECT NAME/NO. USACE - Seneca Army Depot SEAD-25, SEAD-26, and Fire House PFAS ESI Round 3
LAB: Eurofins - Environment Testing America West Sacramento
SDG: 320-61107-1, 320-61727-1, 320-61874-1, 320-62281-1, 320-63742-1, 320-63848-1, 320-63905-1, 320-64050-1, 320-63695-1, 320-64152-1, 320-64237-1, and 320-64647-1
FRACTION: PFAS (USEPA 537.1M/QSM 5.3 Table B-15)
MEDIA: Groundwater, Surface Water, Soil

CRITERIA	Did Analyses Meet all criteria as specified in the SOPs?	Acceptable limits / criteria	Comments/Qualifying Actions	Qualifiers Added?
Data Completeness, Holding Times, & Preservation	Yes	Cooler temp < 4±2ºC. Samples meet method holding time requirement for extraction < 14 days and analysis < 28 days.	Coolers were received within one to three days of sampling at 0.1-3.4°C. All samples were received in good condition based on the laboratory login report. The samples were extracted within 14 days from sample collection.	No
Surrogate Recoveries	No	Recoveries within 50 - 150%	All surrogate recoveries were within QC limits with the exception of the recoveries for 13C2-PFTeDA in samples FHESI20009 (47%R), 26ESI20015 (40%R), 25ESI20018 (40%R), 25ESI20023 (40%R), 25ESI30005 (31%R), 25ESI30007 (43%R), FHESI30001 (39%R), 25ESI30010 (44%R), 25ESI30008 (47%R), 26ESI30004 (28%R), 26ESI30005 (32%R), 26ESI01011 (48%R), FHESI10002 (48%R), FHESI00018 (46%R), 26ESI30007 (32%R), 26ESI30006 (33%R), FHESI20015 (37%R), and FHESI20012 (40%R); 13C4-PFOA in sample 25ESI20016 (47%R); d3-NMeFOSAA in samples 26ESI20013 (48%R), FHESI00018 (48%R), and FHESI20012 (48%R); M2-8:2 FTS in samples 25ESI20016 (191%R), FHESI30001 (158%R), and 26ESI10007 (158%R); 13C2-PFDA in sample 25ESI20016 (158%R); 13C4-PFBA in samples FHESI30002 (36%R), FHESI30001 (22%R), FHESI30003 (33%R), 26ESI30007 (47%R), 26ESI00018 (42%R), and FHESI20012 (43%R); 13C5-PFPeA in samples FHESI30001 (46%R) and FHESI30003 (42%R); M2-6:2 FTS in sample 26ESI10007 (152%R); d5-NEtFOSAA in samples FHESI00018 (45%R) and FHESI20012 (49%R); 13C2-PFDoA in samples FHESI00018 (38%R) and FHESI20012 (49%R); and all low surrogate recoveries in sample 26ESI20024. Therefore, associated results where recoveries fell below the QC limit were considered estimated, possibly biased low, with positive results qualified "J-" and nondetected results qualified "UJ" for the affected samples. Associated positive results where recoveries exceeded the QC limit were considered estimated, possibly biased high, and qualified "J+" for the affected samples.	Yes
Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)	No	Recoveries within limits (70 - 130%) and RPD≤30% or laboratory established limits	All LCS/LCSD recoveries and RPDs within lab QC limits with the exception of the high LCS recovery for NMeFOSAA (120%R; QC limit 77-114%R) associated with samples in SDG 320-61727-1. Validation qualification was not required for the affected samples.	No
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Yes	MS/MSD: 1 per 20 project samples. Recoveries within lab limits (or 70-130%). RPD < lab limit.	All MS/MSD precision and accuracy measurements were within criteria for designated spiked project samples.	No
Blanks	No	Method blanks: 1 per batch. No PFAS detected in MB, TB, EB, or FB (QAPP: No PFAS > 1/2 LOQ).	The laboratory method blank associated with sample FHESI00500 contained PFBA below the reporting limit at a concentration of 0.910 ng/L; the laboratory method blank associated with samples in SDG 320-61727-1 contained PFBA below the reporting limit at a concentration of 0.883 ng/L; the laboratory method blank associated with samples in SDG 320-62281-1 contained PFHxA, PFHxS, and PFOSA below the reporting limit at concentrations of 0.721, 0.457, and 3.07 ng/L, respectively; the equipment blanks associated with samples in SDG 320-62281-1 contained PFBA, PFNA, PFHxS, and PFOS at concentrations of 1.0, 0.49, 0.41, and 8.4 ng/L, respectively; the field blanks associated with samples in SDGs 320-62881-1 and 320-63742-1 contained PFBA below the reporting limit at concentrations of 1.1 and 0.63 ng/L, respectively; the field blanks associated with samples in SDG 320-63848-1 contained PFPeA below the reporting limit at concentrations of 0.41 and 0.42 ng/L; the equipment associated with samples in SDG 320-63848-1 contained PFPeA, PFHxS, PFHxA, PFOA, and PFOS below the reporting limit at concentrations of 0.44, 0.46, 0.61, 1.7, and 1.0 ng/L, respectively; the field blanks associated with samples in SDG 320-63905-1 contained PFPeA and PFHxA below the reporting limit at concentrations of 0.49 and 0.45 ng/L, respectively; the equipment blanks associated with samples in SDG 320-63905-1 contained PFPeA, PFHxA, and PFOA below the reporting limit at concentrations of 0.55, 0.54, and 0.53 ng/L, respectively; the field and equipment blanks associated with samples in SDG 320-64050-1 contained PFPeA below the reporting limit at concentrations ranging 0.44-0.55 ng/L; the laboratory method blanks associated with samples in SDG 320-63695-1 contained PFHxS below the reporting limit at concentrations of 0.393 and 0.567 ng/L; the laboratory method blank associated with the FH samples collected on 8/12/20 and samples 25ESI10001 and 25ESI10002 contained PFPeA below the reporting limit at a concentration of 0.432 ng/L; the field blank associated with samples collected on 8/13/20 contained PFPeA below the reporting limit at a concentration of 0.39 ng/L; the equipment blank associated with samples collected on 8/12/20 contained PFHxS below the reporting limit at a concentration of 0.39 ng/L; the equipment blank associated with samples collected on 8/13/20 contained PFBA below the reporting limit at a concentration of 0.61 ng/L; the field blanks associated with samples in SDG 320-64152-1 contained PFPeA below the reporting limit at concentrations of 0.52 and 0.53 ng/L; the equipment blank associated with samples in SDG 320-64152-1 contained PFPeA and PFHxA at concentrations of 0.47 and 0.46 ng/L, respectively; the equipment blanks and field blanks associated with samples in SDG 320-64237-1 contained PFBA, PFPeA, and PFHxA at concentrations ranging 0.56-2.1, 0.49-0.96, and 0.35-0.59 ng/L; the equipment blank associated with SEAD 26 groundwater samples collected on 8/31/20 contained PFHxS and PFOS at concentrations of 0.37 and 5.1 ng/L, respectively; the equipment blank associated with samples in SDG 320-64647-1 contained PFBA, PFPeA, PFHxA, PFOA, and PFOS at concentrations of 1.8, 1.2, 0.6, 0.52, and 4.2 ng/L, respectively; and the field blank associated with samples in SDG 320-64647-1 contained PFBA, PFPeA, and PFHxA below the reporting limit at concentrations of 1.1, 1.5, and 0.83 ng/L, respectively. Therefore, results for these compounds less than validation action concentrations were considered not detected and qualified "U" for the affected samples.	Yes
LC/MS/MS Tune Check	Yes	Mass assignments of tuning standard within 0.5 ± amu	The first level standard from the initial calibration curve was used to evaluate tune criteria.	No
PFAS Analytes	No	Recalculate 10% sample results	Many sample results exceeded instrument calibration ranges and samples were reanalyzed at a dilution. Diluted sample results were reported. It was noted that the ion ratio exceeded the QC limit for PFOS in samples FHESI00009, 25ESI00013, 25ESI20022, 26ESI00017, 26ESI20016, and FHESI20015; PFHxS in samples 26ESI20023 and 25ESI20017; PFHpS in sample 26ESI20026; PFHxA in samples 25ESI20015, 25ESI00013, 26ESI00017, and FHESI00019; and PFNA in sample 26ESI30005. The results for these compounds were considered estimated, tentatively identified, and qualified "JN" for the affected samples. 10% sample results were recalculated from raw data for verification.	Yes
Reported Detection Limits	Yes	Detection limits adjusted to reflect sample dilutions. Nondetected results reported at LOD.	Detection limit criteria met. Results detected between method detection limit (MDL) and LOQ reported by lab with a "J" qualifier.	No
LC/MS/MS Initial Calibration	Yes	ICAL %RSD ≤ 20% ICV %D ≤ ±30%	All initial calibration criteria were met.	No
LC/MS/MS Continuing Calibration	Yes	CCV performed for every 10 samples. %D ≤ ±30%.	All continuing calibration criteria were met.	No
Internal Standards	No	IS recoveries within 50-150%; RT within ± 0.02 minutes	All IS recoveries within QC limits with the exception of the low IS recovery for 13C2-PFOA in samples 25ESI20016 and 25ESI30008. Positive PFOA results were considered estimated, possibly biased high, and qualified "J+" while nondetected results were considered estimated and qualified "UJ" for the affected samples.	Yes
Field Duplicate Precision	No	All % RPD ≤ 30%	All field duplicate precision results were within criteria with the exception of the precision for PFBA (49%RPD) for sample FHESI20009 and its field duplicate FHESI20010. Therefore, the results for this compound were considered estimated and qualified "J" for the affected parent sample and field duplicate.	Yes

APPENDIX I Survey Table

Appendix I
Survey Table
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Seneca Army Depot Activity

MONITORING WELL	NORTHING	EASTING	GROUND ELEV	CONCRETE ELEVATION	TOP OF METAL CASING	TOP OF PVC PIPE	WELL TYPE
MWFH-01	999522.4533	752049.4948	753.59	N/A	753.71	753.34	FM
MWFH-02	999412.5777	751993.0293	752.49	N/A	752.52	752.32	FM
MWFH-03	999435.9522	752255.4617	752.95	N/A	753.11	752.48	FM
MWFH-04	999706.2222	751952.1385	753.23	N/A	753.31	752.94	FM
MWFH-05	999766.0422	752174.0739	755.68	N/A	755.87	755.56	FM
MWFH-06	1000028.4245	752334.0232	757.63	757.87	760.82	760.39	SU
MWFH-07	999907.9744	752054.1263	754.61	754.68	757.78	757.28	SU
MWFH-08	999970.8689	751831.2261	752.83	752.99	755.72	755.45	SU
MWFH-09	999737.9783	752050.3159	754.63	755.15	758.08	757.33	SU
MWFH-09D	999744.9043	752059.2722	754.67	755.13	757.17	756.90	SU
MWFH-10D	999408.3455	751689.1463	749.95	749.89	749.95	749.47	FM
MWFH-11	999687.9202	751501.1573	751.55	752.13	754.87	754.37	SU
MW25-20	998381.8924	750817.9462	740.78	N/A	740.94	740.78	FM
MW25-21	997965.7028	750289.2539	732.71	N/A	732.85	732.44	FM
MW25-22	997729.8327	750616.9306	733.73	N/A	734.01	733.70	FM
MW25-23	997618.2497	751122.6723	738.59	N/A	738.81	738.54	FM
MW25-24	998241.0218	751884.9097	742.89	N/A	743.14	742.77	FM
MW25-25	998499.1234	751510.4381	743.93	N/A	744.01	743.74	FM
MW25-26	997444.5392	750780.6478	733.56	N/A	733.64	733.10	FM
MW25-27	997408.0868	750335.3668	733.71	N/A	733.97	733.65	FM
MW25-28	997367.0865	749900.6105	731.33	N/A	731.99	731.68	FM
MW25-29	997963.8201	749756.2700	735.06	N/A	735.13	734.92	FM
MW25-30	998536.2023	750274.5465	736.28	N/A	736.40	736.13	FM
MW25-22D	997725.0400	750609.3097	733.59	N/A	735.80	735.61	SU
MW25-31	998015.8040	750939.5777	742.77	743.14	745.90	745.34	SU
MW25-31D	998025.1338	750937.9433	742.96	N/A	744.94	744.63	SU
MW25-32	996875.9420	749439.1464	730.49	730.90	733.81	733.40	SU
MW25-33	998442.2354	752067.9325	747.28	747.45	750.40	750.15	SU
MW25-34	996401.1995	747819.4122	709.45	709.91	712.64	712.01	SU
MW25-34D	996393.8111	747819.5825	709.36	709.69	712.25	711.93	SU
MW26-12	992289.8619	751394.8341	750.90	N/A	751.02	750.64	FM
MW26-13	992370.8882	751174.5450	753.90	N/A	754.11	753.90	FM
MW26-14	992104.8784	751189.7906	753.21	N/A	753.29	753.02	FM
MW26-15	992470.3741	750486.0124	738.68	N/A	738.74	738.50	FM
MW26-16	992217.6726	750528.3182	737.04	N/A	737.14	736.50	FM
MW26-17	991951.9991	750582.8876	736.90	N/A	737.07	736.92	FM
MW26-18	992478.1401	750947.8138	740.51	N/A	740.94	740.61	FM
MW26-19	991579.4989	750999.4879	742.32	N/A	745.94	745.33	SU
MW26-20	992246.2331	749593.8339	721.70	N/A	721.87	721.64	FM
MW26-21	992431.0400	749570.2695	722.08	722.38	724.95	724.74	SU
MW26-22	992001.7709	749634.0881	724.11	724.48	727.25	727.04	SU

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MW26-23	992200.4524	749104.9445	716.94	718.01	719.90	719.75	SU
MW26-23D	992203.6119	749090.8616	716.65	717.15	718.91	718.60	SU
MW26-24	992286.8396	748317.9403	716.62	717.01	719.62	718.71	SU
MW26-25	992605.6808	748117.7781	716.49	716.98	719.60	719.20	SU
MW26-26	992470.1513	751138.5974	753.23	753.65	756.50	756.29	SU
MW26-27	992289.6226	751268.1518	753.30	753.67	757.42	757.13	SU
MW26-28S	992189.4921	751128.1328	752.22	752.64	755.91	755.73	SU
MW26-28D	992203.2013	751126.3026	752.23	753.18	754.45	753.87	SU
MW26-29	991988.3244	751125.7201	750.98	751.38	754.82	754.54	SU
MW26-30	991693.4131	751140.2518	749.68	749.97	753.32	753.09	SU
MW26-31	991598.8889	751203.5446	751.15	751.54	754.76	754.43	SU
MW26-32D	992190.6846	750534.8737	737.90	N/A	739.86	739.46	SU

Footnotes:

1) All wells, except MWFH-09, MWFH-09D, and MWFH-10D, are 2-inches in diameter and PVC construction. MWFH-09, MWFH-09D, and MWFH-10D are 4-inch diameter and PVC construction.

2) Horizontal coordinates referenced to New York State Plane Central (US ft), NAD83. Vertical datum is NAVD88.

3) N/A: Concrete elevation not measured during survey.

4) MWFH-10D is flush-mount. Ground elevation was measured on asphalt surface. Concrete elevation was measured to the rim of the manhole.

5) FM: Flush-mount; SU: Stick-up

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STREAM GAUGE	NORTHING	EASTING	GROUND ELEVATION	WATER ELEVATION (9-16-2020)
SW25-02	997979.6235	750256.6460	728.40	731.15
SW25-04	997591.4236	750139.1073	726.09	731.06
SW25-05	997382.1246	749854.3918	728.81	731.13
SW25-06	996930.2596	749405.2594	721.33	722.77
SW26-04	992315.4535	749177.7973	714.67	716.47
SW26-06	993276.3005	747971.4150	715.70	Dry

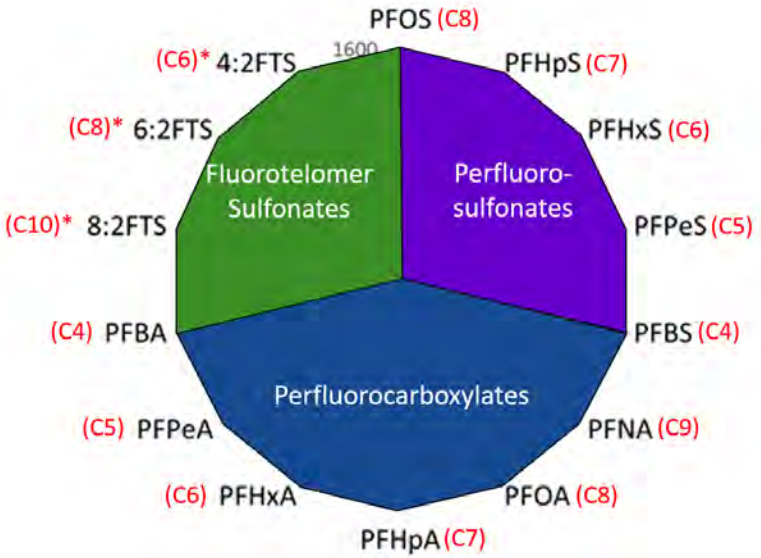
Footnotes:

1) Staff gauges are attached to a T-post and driven into the ground. Ground elevation is the bottom of the creek/stream bed.

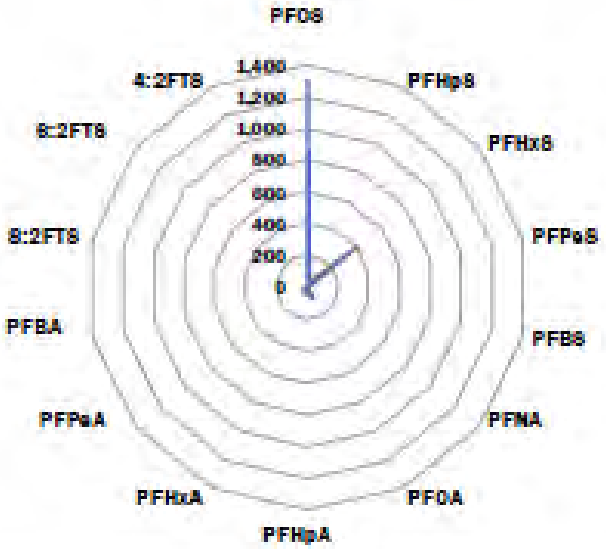
2) Horizontal coordinates referenced to New York State Plane Central (US ft), NAD83. Vertical datum is NAVD88.

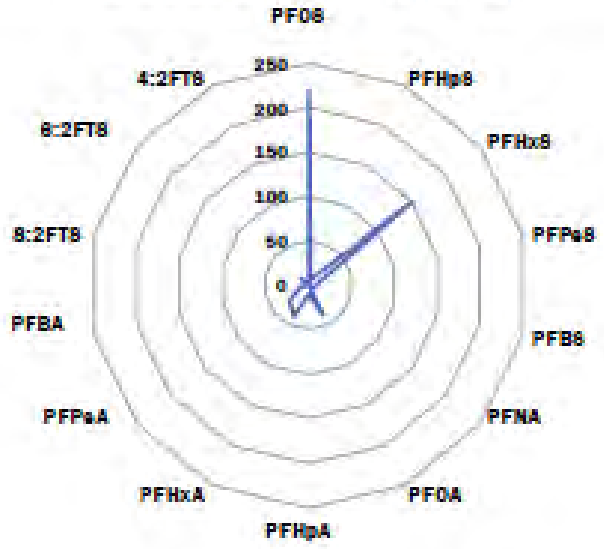
APPENDIX J PFAS Proportional Analysis

Figure J1 – PFAS Proportional Analysis



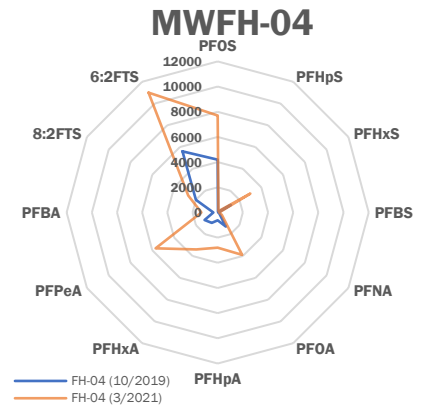
Setup of radar diagram with PFSAs in the northeast quadrant, PFCAs in the southern half, and fluorotelemers in the northwest quadrant. Each segment of the diagram is arranged by decreasing carbon number (e.g., 8-carbon PFOS to 4-carbon PFBS).

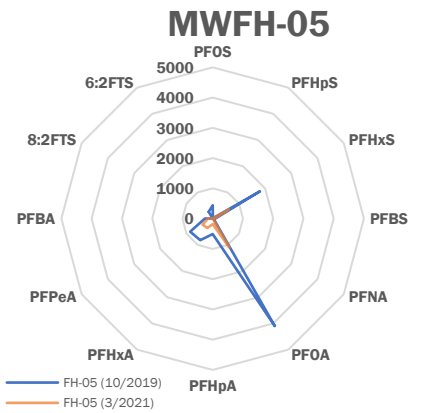


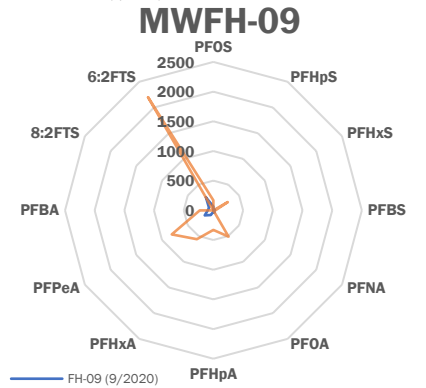


Typical 2 o'clock signature, dominated by PFOS, minor other PFSAs (e.g., PFOA, PFHxS) and PFCAs (e.g., PFHxA), and the fluorotelomer sulfonate (6:2 FTS), observed at an aviation facility from source to distal portions of the plume. Interpreted to represent the use of a similar composition of AFFF and a single PFAS plume.

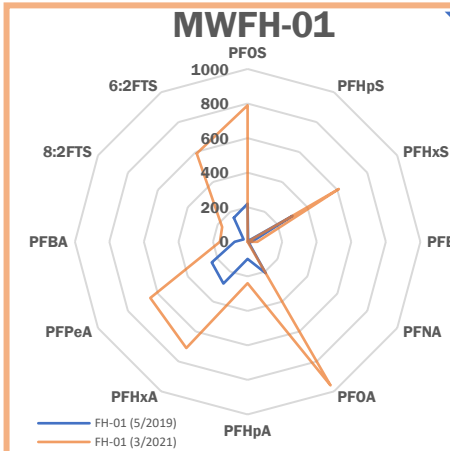
Figure J2 - Fire House PFAS Analysis

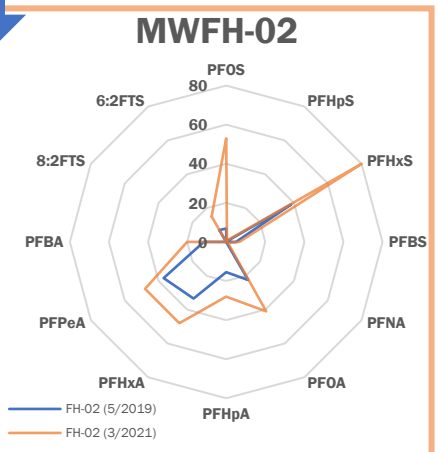




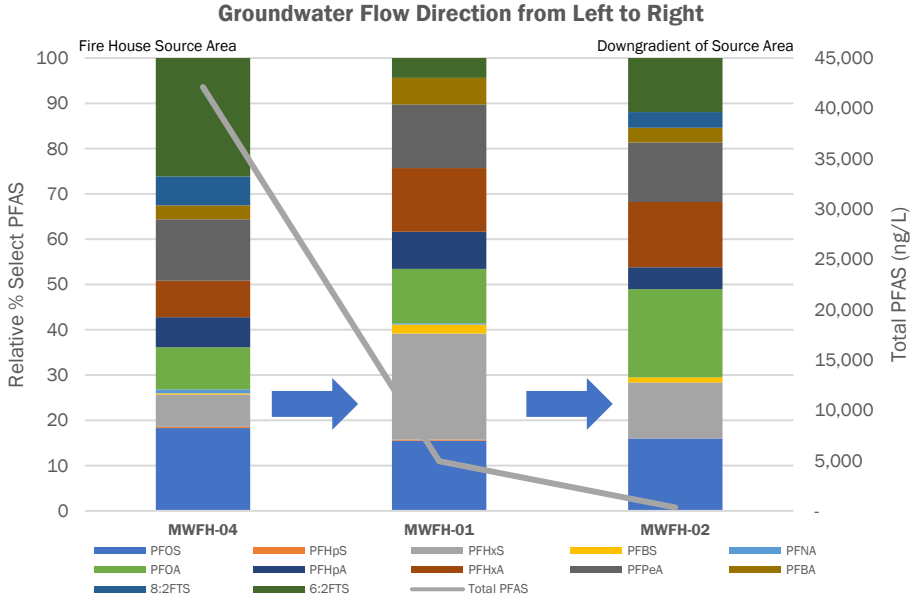


Source Area Wells: Elevated presence of 6:2 FTS in source wells MWFH-04 and -09 suggest use of legacy fluorotelomer-based AFFF. A separate signature, similar those at SEAD-25, is found at well MWFH-05 and is dominated by PFOA, PFHxS and minor PFOS; 6:2FTS was detected at this well in the first round at 260 ng/L.



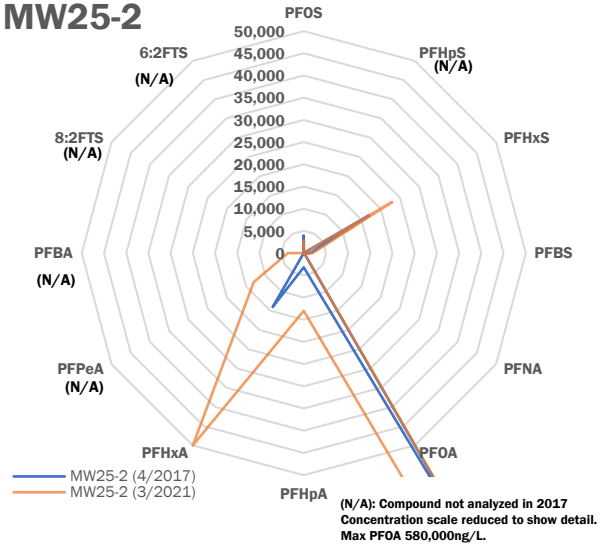


Downgradient: Short chain PFCAs and PFSAs become more abundant in downgradient wells. Wells show mixture of source area signatures.

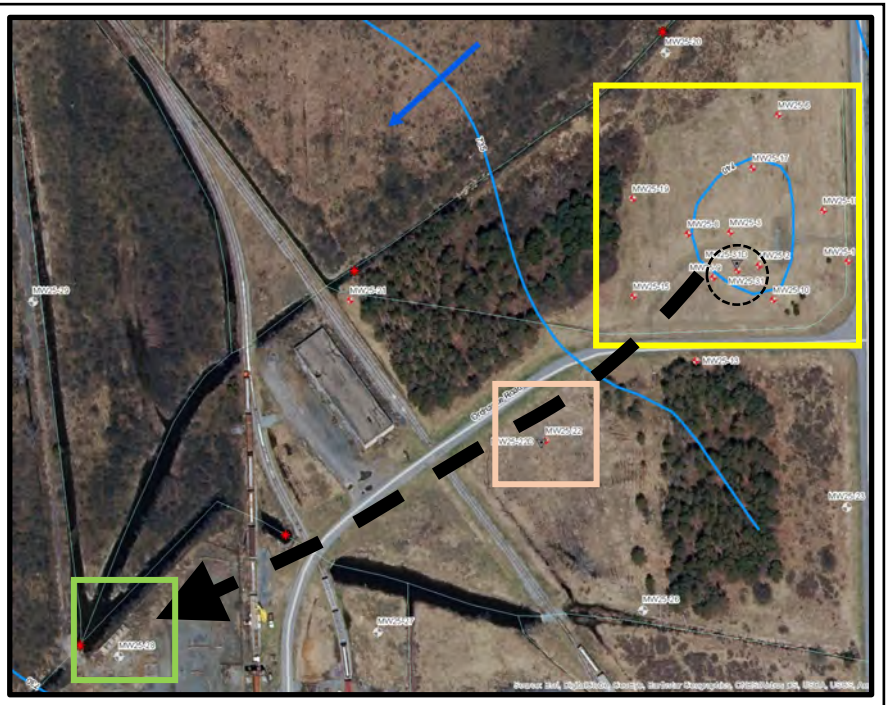


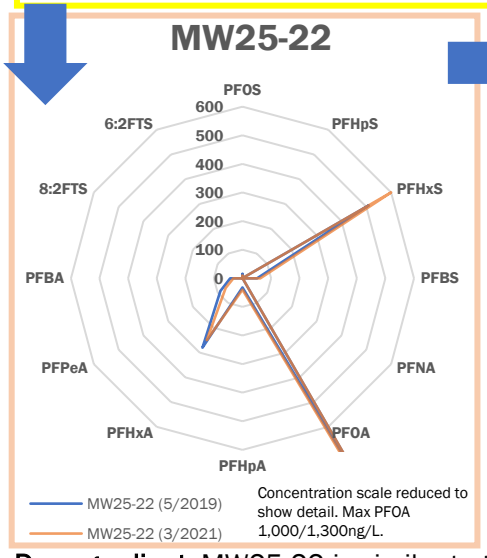
Note: Decrease in total PFAS concentration downgradient of source area and increase in proportion of shorter chain PFSAs (e.g., PFHxS) and PFCAs (e.g., PFBA, PFHxA).

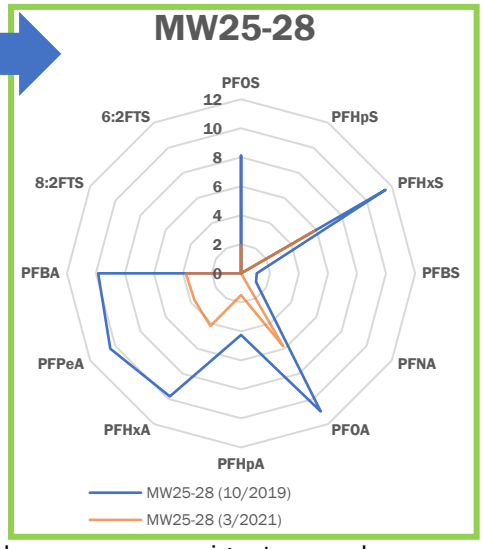
Figure J3 – SEAD-25 PFAS Analysis

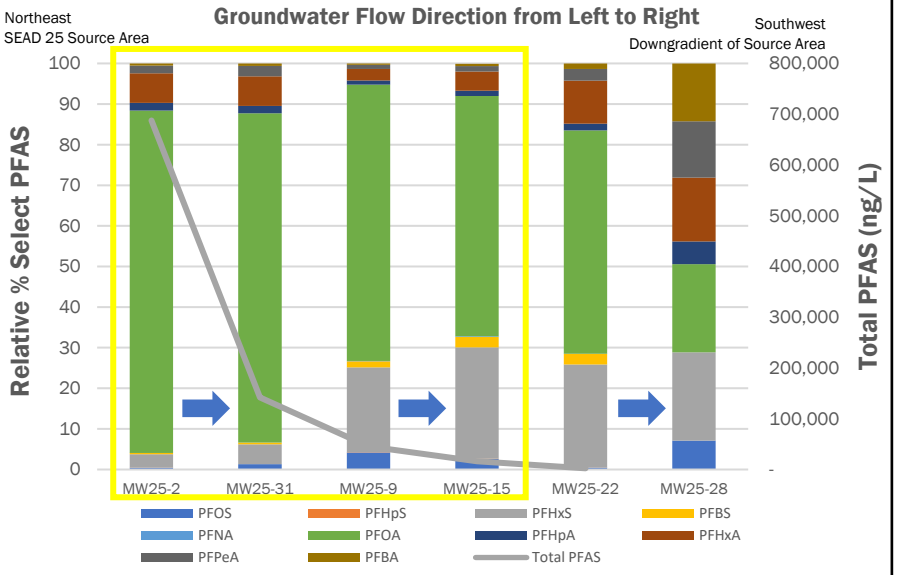


Source Area: The PFAS signature throughout the SEAD-25 source area, except for concentration magnitude, is the same. PFOA is the dominant component typically followed by PFHxS and PFHxA. PFOS is only a minor proportion of the total PFAS concentration.





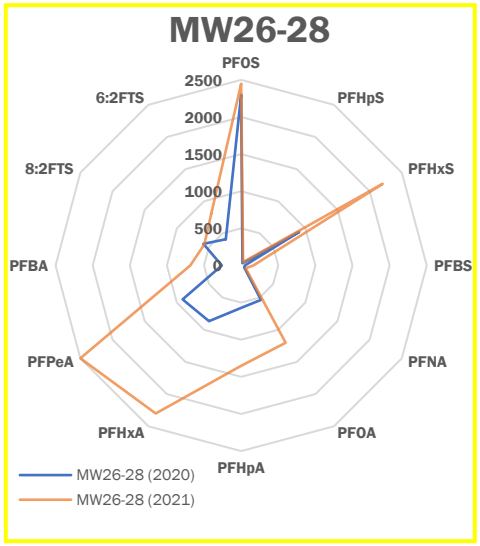


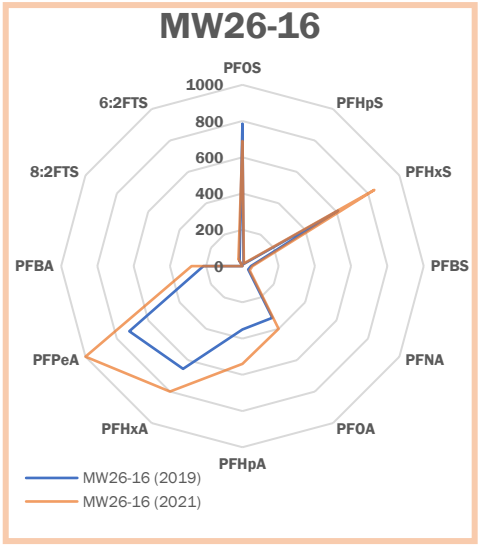


Note: 8:2FTS and 6:2FTS are not shown. 8:2FTS was not detected in any of the wells shown. 6:2FTS was only detected in well MW25-15, but at a relative % of 0.08.

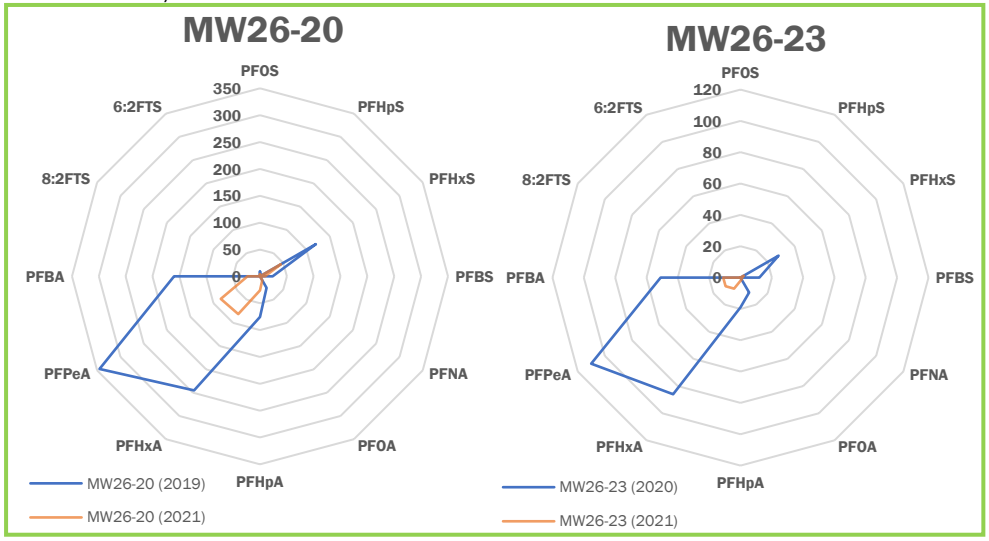
Downgradient: MW25-22 is similar to the source area signature and may represent a continuation of the source plume or separate use/disposal of AFFF in this area. Downgradient well MW25-28 has similar signature with greater proportions of short chain PFSA/PFCAs as shown in bar graph.

Figure J4 – SEAD-26 PFAS Analysis

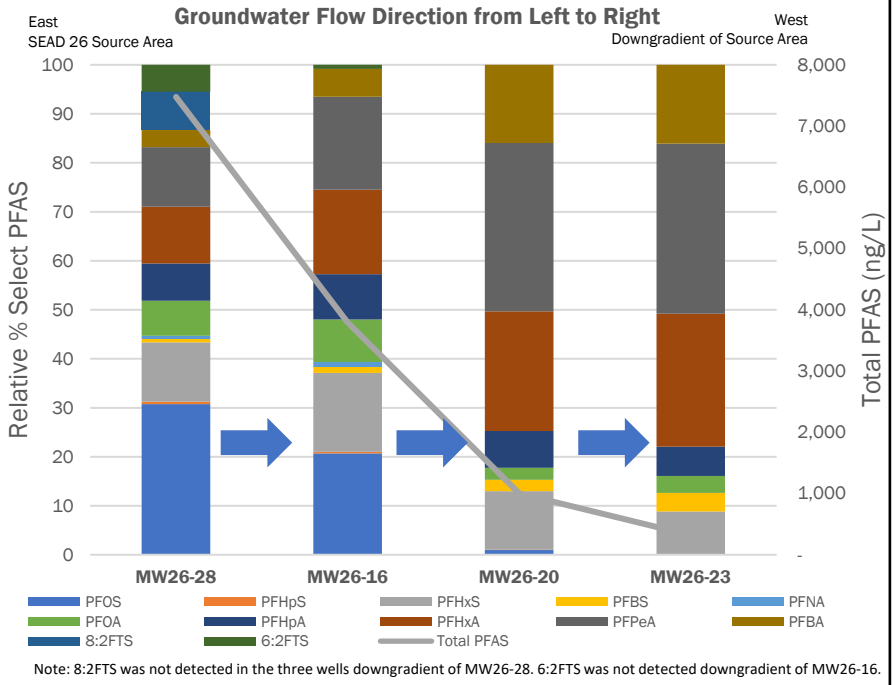




Source area well (MW26-28) has a distinct 2 o'clock AFFF signature (PFOS/PFHxS), but also has elevated concentrations of 6:2FTS, PFHxS, and PFCAs (PFPeA, PFHxA). This signature continues downgradient (MW26-16) with reduced concentration. PFPeA is a dominant compound in most SEAD-26 wells. The PFAS signature at surface water location SW26-02 mirrors that observed at wells MW26-28/16.



Downgradient wells exhibit a similar signature as source area but with reduced proportions of long-chain PFAS (e.g., PFOS, PFOA). Shorter chain PFAS (i.e., PFPeA, PFBA) occupy a larger proportion of the total PFAS concentration as they tend to migrate further from the source area due to lower coefficients of sorption.



Note: 8:2FTS was not detected in the three wells downgradient of MW26-28. 6:2FTS was not detected downgradient of MW26-16.

Total PFAS concentration decreases downgradient. Long-chain PFAS become less abundant with greater proportions of short-chain PFAS (i.e., PFPeA, PFBA, PFHxA, PFHxS).

APPENDIX K Data Summary Technical Memos

July 2019 ESI Data Summary

PARSONS

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Memorandum for Record

Date: 24 July 2019

Subject: **Seneca PFAS ESI – Summary of 15 June 2019 Sampling Results and Proposed**

This memorandum serves as a record of the teleconference, held at 1300 EDT on 15 July 2019, to review the PFAS analytical results from the Seneca Army Depot former Fire House, SEAD-25, and SEAD-26 Expanded Site Investigation (ESI), discuss the path forward for the ESI, and gain concurrence on proposed monitoring well and surface water sample locations.

Attendees: Bob Morse (EPA), Sharissa Singh (EPA), John Swartwout (NYSDEC), Melissa Sweet (NYSDEC), Mark Sergott (NYDOH), Randy Battaglia (CENAN), Derek Pommerenck (CEHNC MMDC Point of Contract/COR), Barry Hodges (CEHNC EPUB), Mike D'Auben (CEHNC), Beth Badik (Parsons), John Santacroce (Parsons), Todd Belanger (Parsons).

A summary of the important decisions and discussions are presented below. Key decisions are noted with a "**path forward**" header.

1. Objectives of the Teleconference
   - Summary of the PFAS analytical results for each of the three AOCs.
   - Presentation of proposed additional monitoring well locations and surface water samples.
   - Regulatory concurrence on the path forward.

2. Fire House Data Summary
   - Beth Badik (Parsons) provided a summary of the data and figures provided to the team. It was noted that the data were unvalidated. Validated data were received the day of the call and would be provided shortly after the teleconference.
   - Elevated concentrations of PFOA and PFOS found at MWFH-02 indicate likely source near the former Fire House.
   - One well, MWFH-03, dry and could not be sampled properly.
   - The Army proposed the installation of an additional well, MWFH-04, to the northwest of the former fire house so that the groundwater flow direction could be determined.
     - Randy Battaglia (Army) stated that the entrance to the Fire House was on the east side but that he did not have the operational or usage history of the Fire House. NYSDEC questioned why we were putting the well to the northwest when the Fire House entrance was on the east side. Parsons stated that we were concerned that another well on the east side may end up dry and that is would be best to determine the groundwater flow direction before adding additional wells.
     - Melissa Sweet (NYSDEC) and Sharissa Singh (EPA) agreed with the location of proposed well MWFH-04 to determine groundwater flow direction, but also expressed an interest in more wells on the east side of the Fire House and near MWFH-01 or where equipment was previously stored.
   - Representatives of EPA and NYSDEC/DOH requested additional wells near the fire house to characterize the extent of the impacts in this area.
   - Ms. Singh stated for the record her concern that the upper aquifer beyond 15ft has not been fully characterized and that this was a data gap that should be addressed in the Remedial Investigation (RI).
   - ***Path Forward:***
     - Based on the discussion above, the Army will review the proposed well location (MWFH-04), consider the timing of any additional wells, and send updated figures to the project team.

3. SEAD-25 Data Summary
   - Ms. Badik described the location of existing wells (prior to the ESI) were noted on the figure. These wells were sampled for PFAS during a Site Inspection (SI) in 2017. The concentrations measured in the ESI wells tend to bound contamination to the north and east of the site with a PFAS plume evident towards the southwest in the direction of local groundwater flow.
   - Ms. Singh disagreed that the contamination was bound to the east since the wells were only sampled once. She stated that EPA would like additional sampling to be conducted on the wells east of SEAD-25. Multiple rounds of sampling would confirm if contamination was bounded to the east. Additionally, since there may be a radial component to the local groundwater flow, EPA requests more wells to the north and east. If the proposed MCL (10 ppt) is promulgated in New York, the ESI concentrations in this area (MW25-24) would be hovering around this regulatory limit.
     - Ms. Badik stated that this was a good recommendation and that additional sampling would be appropriate for the RI. Mr. Battaglia agreed and stated that this investigation was not a full RI and was designed to delineate where PFAS contamination was present and if it would impact where people might be exposed to drinking groundwater.
   - Mr. Battaglia asked if EPA would like to move proposed well MW25-29 or any of the other proposed wells to address Ms. Singh's concerns about coverage.
   - Ms. Singh replied that EPA would like to move MW25-29 to the location of the 'chem box' for MW25-21 [Note: this location would be at the intersection approximately due west of MW25-21 and north of SW25-03] and add a well (MW25-30) to the approximate location of the "See Inset" box [Note: this location is west of MW25-20 and north of MW25-21]. EPA would also like additional sampling taken in the eastern portion of the site.
   - Mark Sergott (NYSDOH) mentioned adding more wells further to the west of SEAD-25. EPA and NYSDEC disagreed and preferred wells closer to the site to define the local plume and where it is moving prior to expanding the investigation further from the site. Mark agreed but noted the data gap to the west of MW25-21. [Note: the move of well MW25-29 would address this data gap]
   - Ms. Singh asked if any residences in the area used the groundwater. Ms. Badik and Mr. Battaglia explained that there was a groundwater restriction at the site, the upper aquifer is a low-yield formation which does not provide an adequate drinking water supply, and that the local housing units are attached to a municipal water supply.
   - Ms. Sweet inquired if the ESI wells were surveyed. Ms. Badik replied that they had not been surveyed but we were hopeful this would be included in future scope.
   - Barry Hodges (Army) asked if the SEAD-16/17 wells had been considered for sampling. Ms. Sweet stated that those wells were pretty far away from the sources. Ms. Badik agreed, but stated we could report the groundwater flow direction in these areas as the wells are part of long-term monitoring for metals contamination.
   - Mr. Swartwout inquired about surface water in the local ditches that could transport contamination to the southwest. The team discussed the locations of the proposed surface water samples and NYSDEC agreed with the proposed locations.
   - *Path Forward:*
     - The Army will review the following proposals:
       - Move the proposed location of MW25-29 to area west of MW25-21 and north of SW25-03.
       - Add an additional well to the west of MW25-20 and north of MW25-21.
     - Provide groundwater flow directions at SEAD-16 and SEAD-17.

4. SEAD 26 Data Summary
   - Ms. Badik noted that this figure was oriented so that north was to the left side of the PDF and the direction of groundwater flow was to the west (down on the PDF). Temporary wells (labeled TMW) were installed and sampled for PFAS during the 2017 SI. Permanent wells were installed during the ESI. Proposed additional wells MW26-18 and MW26-19 are located downgradient to evaluate impacts from the high concentrations at TMW26-6 and TMW26-7. Additional well MW26-20 is proposed approximately 900ft downgradient of MW26-16. Based on the

results of the three additional wells, a fourth well will be installed to further delineate the contamination downgradient of SEAD-26.

- Ms. Badik stated that the railroad tracks west of the TWM-5 to TWM-8 line of wells is approximately 15 ft lower in elevation than the wells. This sloped area (shaded on the figure) would be investigated for water seeps and surface water samples would be collected.
- NYSDEC agreed with the proposed location of MW26-20 and the addition of a fourth well based on the results of the other three locations.
- Ms. Singh noted that EPA would like additional wells added to the south since the concentrations at TMW-26-4 and TMW-26-8 (41 and 11 ng/L, respectively) were high compared to the possible future MCL.
    - Mr. Battaglia stated that the location of MW26-19 could be moved further south. The team agreed to a location near the railroad tracks due west of TMW26-4.
- Mr. Battaglia noted that there was a groundwater restriction on SEAD-25 and SEAD-26. Based on discussions with the future landowner (Earl Martin) a final transfer has not been completed on the land west of the AOCs and that they were aware of the potential contamination and would be willing to consider a land use control (LUC) for the future farmland. The farms west of the site are aware of the limited water in the shallow aquifer and would be interested in tying into the municipal water system.
- Ms. Singh noted that the wells were only sampled once and asked if there would be future sampling. Mr. Battaglia mentioned to the team that funding was approved for a base-wide preliminary assessment (PA) and a RI for the SEAD 25/26 AOCs. The PA and RI have not been scoped yet; however, the RI would likely start next year.
- Ms. Sweet asked about an east-west preferential pathway that is visible on the figure between TMW26-3 and MW26-16. Mr. Battaglia stated that there is a ditch there that drains the wooded area. This wooded area is extremely dense and has no access unless it were cleared.
- Mr. Sergott inquired what the next deliverable would be. Ms. Badik stated that we would submit updated figures and a corresponding letter. Details of the work would comply with the existing work plan and QAPP.
- *Path Forward:*
    - Four additional wells are proposed in the noted locations. Ground reconnaissance in the shaded area (east of the railroad tracks) will look for water seeps. Surface water samples would be collected.
    - Parsons to move proposed location of MW26-19 to railroad tracks due west of TWM26-4.
    - Provide updated figures and letter referencing the existing work plan and QAPP.
    - Ms. Sweet reminded Parsons that NYSDEC will want the data for their EQUIS database. Parsons would submit the data in a timely manner.

The call concluded at 1450 hours.

SEAD 25 PFOS/PFOA Exceedances Samples Collected during Site Investigation (2017)

MW25-6
PFOA 140
PFOA/S 145.8

MW25-17
PFOA 11,000
PFOA/S 13,600
PFOS 2,600

MW25-19
PFOA/S 12,100
PFOS 2,100
PFOA 10,000

MW25-3
PFOS 2,300 J
PFOA/S 9,800
PFOA 7,500 J

MW25-18
PFOA 550
PFOA/S 570

SEAD-25

MW25-8
PFOS 8,300
PFOA 17,000
PFOA/S 25,300

MW25-1
PFOA/S 10,490
PFOS 490
PFOA 10,000

MW25-15
PFOA/S 7,380
PFOA 6,800 / 6,900
PFOS 490 / 480

MW25-9
PFOA/S 19,400
PFOS 1,400
PFOA 18,000

MW25-2
PFOA/S 92,900
PFOS 3,900
PFOA 89,000 J

MW25-10
PFOA 2,000 / 2,100
PFOA/S 2,340
PFOS 250 / 240

MW25-13
PFOA/S 71.4

0 40 80 160 240 320 Feet

Source: Esri, DigitalGlobe, GeoEye, ... Geographics, CNES/Airbus DS, ...SGS, AeroGRID, IGN, and the GIS ...mmunity

Kendaia Road

East Patrol Road

East Patrol Road

Former Fire House

MWFH-04

MWFH-01

No Sample

MWFH-03

MWFH-02

MWFH-01	
PFOS	**220**
PFOA	**210** J

MWFH-02	ng/L
PFOS	6.85
PFOA	22.5

Drainage Direction

Approximate transition to open drainage ditch

SWFH-01

SEAD-16

Local GW Flow Direction

SW25-01	ng/L
PFOS	**78**
PFOA	26

MW25-20	ng/L
PFOS	ND
PFOA	8.15

MW25-25	ng/L
PFOS	ND
PFOA	0.79 J

MW25-25

MW25-30

SW25-01

MW25-20

Surface Water Flow Direction

Predominant GW Flow Direction

Administration Avenue

MW25-24

SW25-02	ng/L
PFOS	57.5
PFOA	**115**

Local GW Flow Direction

SEAD-17

MW25-29

SW25-02

MW25-21

MW25-24	ng/L
PFOS	11
PFOA	3.7

State Highway 96

See Inset

Road

MW25-21	ng/L	
PFOS	**140**	J
PFOA	**720**	J

MW25-22	ng/L	
PFOS	16	J
PFOA	**1000**	J+

MW25-22

MW25-23

MW25-23	ng/L
PFOS	ND
PFOA	3.35

SW25-03

MW25-27

SW25-05

MW25-26

MW25-28

SW25-06

Surface Water Flow Direction

Surface Water Flow Direction

Ordnance Road

1st Street

East Patrol Road

SW25-04

N W E S

Legend

- Proposed Surface Water Sample
- Proposed Monitoring Well
- ESI Sampled Well
- ESI Surface Water Sample
- Existing Well Sampled During SI
- Open Drainage
- Storm Sewer Main
- Fenceline
- Approximate PID Area Boundary

Notes:
1) ESI (2019) results are validated. Valid qualifiers shown.
2) PFOA and PFOS bolded when above 70 ng/L.
3) Local groundwater flow direction at SEAD 25 is radial. Predominant groundwater flow direction in the area of this figure is to the west and southwest.
4) Flow in drainage pipes and ditches is to the south, west, and southwest.
5) Wells shown in the inset near the former Fire Training Pad were sampled during the 2017 Site Investigation (SI).
ng/L = nanograms per liter

Chemical Name	Abbreviation	CAS Number
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorooctanoic acid	PFOA	335-67-1

0 200 400 800 1,200 1,600 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SENECA ARMY DEPOT ACTIVITY
SEAD 25 and SEAD 26 PFAS ESI

FIGURE 1 - SEAD 25 and Fire House
PFAS ESI PFOS/PFOA Results - June 2019

1 in = 400 ft | June 2019

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Notes:
1) ESI (June 2019) results are validated. Valid qualifiers shown.
2) PFOA and PFOS bolded when above 70 ng/L.
3) Site Investigation (SI) PFOS/PFOA concentrations are shown at temporary well locations (TMW wells) sampled in April 2017.
ng/L = nanograms per liter

Chemical Name	Abbreviation	CAS Number
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorooctanoic acid	PFOA	335-67-1

MW26-12	ng/L
PFOS	ND
PFOA	0.52 J

TMW-26-2	ng/L
PFOS	64
PFOA	**79**

MW26-14	ng/L
PFOS	6.2
PFOA	4.5

TMW-26-1	ng/L
PFOS	4.9 J
PFOA	1.3 J

MW26-13	ng/L
PFOS	ND
PFOA	7.9

TMW-26-4	ng/L
PFOS	4.9
PFOA	41

TMW-26-5	ng/L
PFOS	3 J
PFOA	3.6

TMW-26-6	ng/L
PFOS	3.5 J
PFOA	**170**

TMW-26-3	ng/L
PFOS	**240**
PFOA	**340**

TMW-26-7	ng/L
PFOS	2 J
PFOA	**240**

TMW-26-8	ng/L
PFOS	8.8
PFOA	11

MW26-15	ng/L
PFOS	ND
PFOA	0.54 J

MW26-16	ng/L
PFOS	**785** J
PFOA	**330** J+

MW26-17	ng/L
PFOS	ND
PFOA	3.7

Avenue D
Brady Road
Avenue C
7th Street
Avenue B
Avenue A
747
746
745
744
743
742
741
MW26-12
TMW-26-2
TMW-26-1
MW26-13
MW26-14
Former Bentonite Lined Pit
TMW-26-4
TMW-26-5
TMW-26-6
TMW-26-3
TMW-26-7
TMW-26-8
MW26-18
MW26-19
Visual reconnaissance to be conducted in shaded area for water seeps in the slope surface. Up to three surface water samples may be collected.
Groundwater Flow Direction
MW26-17
MW26-16
MW26-15
MW26-20

Proposed well MW26-20 is approximately 900ft downgradient of MW26-16. A second well, MW26-21, may be installed based on the results of MW26-20. Exact locations to be determined in the field based on ground conditions and accessibility.

0 75 150 300 450 600 Feet

0 375 750 1,500 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthsta

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Proposed Monitoring Well
- ESI Sampled Well
- Temporary Well Sampled during SI
- GW Contours (04 Dec 1995)
- Open Drainage
- Storm Sewer Main
- Railways
- Fenceline
- Approximate PID Area Boundary

SENECA ARMY DEPOT ACTIVITY
SEAD 25 and SEAD 26 PFAS ESI

FIGURE 2 - SEAD 26 PFAS ESI
PFOS/PFOA Results - June 2019

1 in = 150 ft	June 2019

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East Kendaia Road
SEAD-10
309
113
308
SEAD-121D
306
Warehouse Street
114
SEAD-31
SEAD 71
127
SEAD-121E
SEAD-121H
129
130
128
310
S-361
366
SEAD 16
S-311
SEAD 59
SEAD 5
Approximate transition to open drainage ditch
SW25-01
MW25-20
SEAD 25
SEAD 25
SW25-02
MW25-21
367
SEAD 17
312
MW25-22
MW25-23
Former Fire House
109
East Patrol Road
104
SEAD-42
106
106A
T-145
103
1st Avenue
102
MWFH-01
MWFH-03
SEAD-36
115
116
2nd Avenue
Center Street
SEAD 39
121
117
SEAD-33
MWFH-02
101
4th Avenue
122
119
3rd Avenue
125
123
118
SEAD-30
South Street
135
S-131
SEAD-121F
S-139
136
126
138
MW25-25
SEAD-121G
MW25-24
State Highway 96
Administration Avenue
Fayette Road
SEAD-53
SEAD 2
SEAD 121C
T-355
SEAD-27
360
316
SEAD-28
317
372
318
SEAD 40
SEAD-37
307
319
Ordnance Road
371
320
321
Optical Place
Avenue B
333
Arms Place
334R
2nd Street
332
332

N
W
E
S

Legend

- Surface Water Sample
- ESI Sampled Well
- GW Contours, March 2018
- Existing Well Sampled During SI
- SEAD Boundaries
- SEDA_Buildings
- Fenceline
- Approximate PID Area Boundary
- SEDA Boundary

0 200 400 800 1,200 1,600 Feet

SENECA ARMY DEPOT ACTIVITY
SEAD 25 and SEAD 26 PFAS ESI

SEDA Buildings and SEADs near SEAD 25

1 in = 400 ft | June 2019

\\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\SEAD25_PFAS_ESI_SEADsBldgs_070219.mxd lxh 7/3/2019

PFAS ESI Validated Groundwater Results (June 2019)
Former Fire House, SEAD 25 and SEAD 26
Seneca Army Depot Activity

Area										FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
Loc ID										MWFH-01		MWFH-02		MWFH-02		MW25-20		MW25-20		MW25-21		MW25-22	
Matrix										GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
Sample ID										FHESI20001		FHESI20002		FHESI20004		25ESI20001		25ESI20007		25ESI20002		25ESI20003	
Sample Date										5/24/2019		5/24/2019		5/24/2019		5/28/2019		5/28/2019		5/31/2019		5/29/2019	
QC Type										SA		SA		DU		SA		DU		SA		SA	
Study ID										2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI	
Sample Round																							
Filtered										Total		Total		Total		Total		Total		Total		Total	
Criteria									USEPA 2016 PFOA Health Advisory														
Parameter	Unit	Max Detected Value		Max Detected Loc ID	Sample Date	Frequency of Detects	Num of Detects	Num of Analyses	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																							
6:2 FTS	NG/L	160		MWFH-01	5/24/2019	29%	5	17			160		7.4	J	6.7	J	19	U	19	U	19	UJ	19	U
8:2 FTS	NG/L	27		MWFH-01	5/24/2019	6%	1	18			27		9.5	U	9.4	U	9.4	U	9.6	U	9.4	UJ	9.3	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0				0%	0	18			9.4	U	9.5	U	9.4	U	9.4	U	9.6	U	9.4	UJ	9.3	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	5/24/2019	6%	1	18			4	J	9.5	U	9.4	U	9.4	U	9.6	U	9.4	UJ	9.3	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	58	J	MW25-21	5/31/2019	78%	14	18			24		5.1		4.8		1.8	J	1.8	J	58	J	51	
Perfluorobutyric acid (PFBA)	NG/L	220		MW26-16	5/31/2019	89%	16	18			75		12		11	J-	6.3		6.3		58	J	43	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0				0%	0	18			1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	UJ	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	0.5	J	MWFH-01	5/24/2019	6%	1	18			0.5	J	0.95	U	0.94	U	0.94	U	0.96	U	0.94	UJ	0.93	U
Perfluorododecanoic acid (PFDoA)	NG/L	0				0%	0	18			1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	UJ	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	14		MW26-16	5/31/2019	33%	6	18			4.7		0.35	J	0.94	U	0.94	U	0.96	U	5.5	J	0.92	J
Perfluoroheptanoic acid (PFHpA)	NG/L	360		MW26-16	5/31/2019	83%	15	18			99		15		16		1.8	J	1.8	J	28	J	32	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	610	J	MW26-16	5/31/2019	72%	13	18			300	J	40		37		8.2		8.4		310	J	510	J
Perfluorohexanoic acid (PFHxA)	NG/L	660	J	MW26-16	5/31/2019	94%	17	18			280	J	35		32		6.4		6.9		250	J	280	J
Perfluorononanoic acid (PFNA)	NG/L	38	J	MW26-16	5/31/2019	33%	6	18			7.5		1.4	U	1.4	U	1.4	U	1.4	U	0.5	J	0.69	J
Perfluorooctane Sulfonamide (FOSA)	NG/L	8.3		MWFH-01	5/24/2019	6%	1	18			8.3		2.8	U	2.8	U	2.8	U	2.9	U	2.8	UJ	2.8	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	800	J	MW26-16	5/31/2019	50%	9	18	70	3	**220**		7.4		6.3		2.8	U	2.9	U	140	J	16	J
Perfluorooctanoic acid (PFOA)	NG/L	1,000	J+	MW25-22	5/29/2019	100%	18	18	70	5	**210**	**J**	23		22		8.7		7.6		**720**	**J**	**1,000**	**J+**
Perfluoropentanoic acid (PFPA)	NG/L	720	J	MW26-16	5/31/2019	89%	16	18			240		37		37		6.7		6.1		110	J	89	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0				0%	0	18			2.8	U	2.8	U	2.8	U	2.8	U	2.9	U	2.8	UJ	2.8	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0				0%	0	18			2.8	U	2.8	U	2.8	U	2.8	U	2.9	U	2.8	UJ	2.8	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0				0%	0	18			1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	UJ	1.4	U
PFOS + PFOA Summation	NG/L	1,130	J	MW26-16	5/31/2019	100%	18	18	70	5	**430**	**J**	30.4		28.3		11.5		10.5		**860**	**J**	**1,016**	**J**

Footnotes:
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3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.
- Bold values represent a results that is above EPA Drinking Water Health Advisory. ####
4) Criteria action level source document and web address.
- The EPA EPA PFOA & PFOS Drinking Water Health Advisory values were obtained from the provided links.
https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos

PFAS ESI Validated Groundwater Results (June 2019)
Former Fire House, SEAD 25 and SEAD 26
Seneca Army Depot Activity

Area										SEAD-25	SEAD-25	SEAD-25	SEAD-25	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26	SEAD-26
Loc ID										MW25-23	MW25-23	MW25-24	MW25-25	MW26-12	MW26-13	MW26-14	MW26-15	MW26-16	MW26-16	MW26-17
Matrix										GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER
Sample ID										25ESI20004	25ESI20008	25ESI20005	25ESI20006	26ESI20001	26ESI20002	26ESI20003	26ESI20004	26ESI20005	26ESI20007	26ESI20006
Sample Date										5/29/2019	5/29/2019	5/30/2019	5/30/2019	5/31/2019	5/30/2019	5/31/2019	5/31/2019	5/31/2019	5/31/2019	5/31/2019
QC Type										SA	DU	SA	SA	SA	SA	SA	SA	SA	DU	SA
Study ID										2019 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI	2019 PFAS ESI
Sample Round																				
Filtered										Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
Criteria									USEPA 2016 PFOA Health Advisory											
Parameter	Unit	Max Detected Value		Max Detected Loc ID	Sample Date	Frequency of Detects	Num of Detects	Num of Analyses	Action Level	Detects Above Standard-1	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Per- and polyfluoroalkyl substances (PFAS)																					
6:2 FTS	NG/L	160		MWFH-01	5/24/2019	29%	5	17			19 U	19 UJ	19 U	19 U	19 U	8.8 J	19 U	19 UJ	29 J		19 U
8:2 FTS	NG/L	27		MWFH-01	5/24/2019	6%	1	18			9.4 U	9.5 UJ	9.6 U	9.4 U	9.5 U	9.6 U	9.5 U	9.4 UJ	9.5 U	9.5 UJ	9.5 U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0				0%	0	18			9.4 U	9.5 UJ	9.6 U	9.4 U	9.5 U	9.6 U	9.5 U	9.4 UJ	9.5 U	9.5 UJ	9.5 U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	5/24/2019	6%	1	18			9.4 U	9.5 UJ	9.6 U	9.4 U	9.5 U	9.6 U	9.5 U	9.4 UJ	9.5 U	9.5 UJ	9.5 U
Perfluorobutanesulfonic acid (PFBS)	NG/L	58	J	MW25-21	5/31/2019	78%	14	18			0.94 U	0.95 UJ	0.78 J	0.78 J	0.95 U	1 J	3	0.94 UJ	48	46 J	0.56 J
Perfluorobutyric acid (PFBA)	NG/L	220		MW26-16	5/31/2019	89%	16	18			4.4	4.6 J	6.7	4.1	1.4 U	63	18	1.4 UJ	220	210 J	33
Perfluorodecanesulfonic acid (PFDS)	NG/L	0				0%	0	18			1.4 U	1.4 UJ	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 UJ	1.4 U	1.4 UJ	1.4 U
Perfluorodecanoic acid (PFDA)	NG/L	0.5	J	MWFH-01	5/24/2019	6%	1	18			0.94 U	0.95 UJ	0.96 U	0.94 U	0.95 U	0.96 U	0.95 U	0.94 UJ	0.95 U	0.95 UJ	0.95 U
Perfluorododecanoic acid (PFDoA)	NG/L	0				0%	0	18			1.4 U	1.4 UJ	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 UJ	1.4 U	1.4 UJ	1.4 U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	14		MW26-16	5/31/2019	33%	6	18			0.94 U	0.95 UJ	0.96 U	0.94 U	0.95 U	0.96 U	0.95 U	0.94 UJ	14	12 J	0.95 U
Perfluoroheptanoic acid (PFHpA)	NG/L	360		MW26-16	5/31/2019	83%	15	18			0.62 J	0.69 J	4.4	1.4 U	1.4 U	21	5.5	1.4 UJ	360	340 J	15
Perfluorohexanesulfonic acid (PFHxS)	NG/L	610	J	MW26-16 MW26-16	5/31/2019 5/31/2019	72%	13	18			0.94 U	0.95 UJ	9.2	3.3	0.95 U	11	12	0.94 UJ	610	610 J	0.95 U
Perfluorohexanoic acid (PFHxA)	NG/L	660	J	MW26-16	5/31/2019	94%	17	18			3	2.6 J	7.3	0.54 J	0.48 J	69	26	0.94 UJ	650	660 J	83
Perfluorononanoic acid (PFNA)	NG/L	38	J	MW26-16	5/31/2019	33%	6	18			1.4 U	1.4 UJ	0.5 J	1.4 U	1.4 U	1.4 U	1.4 U	1.4 UJ	37	38 J	1.4 U
Perfluorooctane Sulfonamide (FOSA)	NG/L	8.3		MWFH-01	5/24/2019	6%	1	18			2.8 U	2.9 UJ	2.9 U	2.8 U	2.9 U	2.9 U	2.9 U	2.8 UJ	2.8 U	2.8 UJ	2.8 U
Perfluorooctanesulfonic acid (PFOS)	NG/L	800	J	MW26-16	5/31/2019	50%	9	18	70	3	2.8 U	2.9 UJ	11	2.8 U	2.9 U	2.9 U	6.2	2.8 UJ	**770**	**800 J**	2.8 U
Perfluorooctanoic acid (PFOA)	NG/L	1,000	J+	MW25-22	5/29/2019	100%	18	18	70	5	3	3.7 J	3.7	0.79 J	0.52 J	7.9	4.5	0.54 J	**330 J+**	**330 J**	3.7
Perfluoropentanoic acid (PFPA)	NG/L	720	J	MW26-16 MW26-16	5/31/2019 5/31/2019	89%	16	18			4.4	4.3 J	9.1	0.94 U	0.64 J	120	20	0.94 UJ	720	720 J	130
Perfluorotetradecanoic acid (PFTeA)	NG/L	0				0%	0	18			2.8 U	2.9 UJ	2.9 U	2.8 U	2.9 U	2.9 U	2.9 U	2.8 UJ	2.8 U	2.8 UJ	2.8 U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0				0%	0	18			2.8 U	2.9 UJ	2.9 U	2.8 U	2.9 U	2.9 U	2.9 U	2.8 UJ	2.8 U	2.8 UJ	2.8 U
Perfluoroundecanoic acid (PFUnA)	NG/L	0				0%	0	18			1.4 U	1.4 UJ	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 UJ	1.4 U	1.4 UJ	1.4 U
PFOS + PFOA Summation	NG/L	1,130	J	MW26-16	5/31/2019	100%	18	18	70	5	5.8	6.6 J	14.7	3.59 J	3.42 J	10.8	10.7	3.34 J	**1,100 J**	**1,130 J**	6.5

Footnotes:
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- Bold values represent a results that is above EPA Drinking Water Health Advisory.
####
4) Criteria action level source document and web address.
- The EPA EPA PFOA & PFOS Drinking Water Health Advisory values were obtained from the provided links.
https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos

PFAS ESI Validated Surface Water Results (June 2019)
Former Fire House, SEAD 25 and SEAD 26
Seneca Army Depot Activity

Area											SEAD-25		SEAD-25		SEAD-25	
Loc ID											25SW-01		25SW-02		25SW-02	
Matrix											SURFACE WATER		SURFACE WATER		SURFACE WATER	
Sample ID											25ESI30001		25ESI30002		25ESI30003	
Sample Date											6/3/2019		6/3/2019		6/3/2019	
QC Type											SA		SA		DU	
Study ID											2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI	
Sample Round																
Filtered											Total		Total		Total	
Criteria									USEPA 2016 PFOA Health Advisory							
Parameter	Unit	Max Detected Value		Max Detected Loc ID	Sample Date	Frequency of Detects	Num of Detects	Num of Analyses	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																
6:2 FTS	NG/L	81		25SW-01	6/3/2019	100%	3	3			81		46		46	
8:2 FTS	NG/L	21		25SW-01	6/3/2019	100%	3	3			21		17	J	15	J
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0				0%	0	3			9.4	U	9.9	U	9.5	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0				0%	0	3			9.4	U	9.9	U	9.5	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	7.6		25SW-02	6/3/2019	100%	3	3			4.7		7.1		7.6	
Perfluorobutyric acid (PFBA)	NG/L	12		25SW-02	6/3/2019	100%	3	3			11		12		11	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0				0%	0	3			1.4	U	1.5	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	0.5	J	25SW-01	6/3/2019	33%	1	3			0.5	J	0.99	U	0.95	U
Perfluorododecanoic acid (PFDoA)	NG/L	0				0%	0	3			1.4	U	1.5	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1.7	J	25SW-01	6/3/2019	100%	3	3			1.7	J	1.4	J	1.2	J
Perfluoroheptanoic acid (PFHpA)	NG/L	18		25SW-02	6/3/2019	100%	3	3			15		16		18	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	130		25SW-02	6/3/2019	100%	3	3			38		130		130	
Perfluorohexanoic acid (PFHxA)	NG/L	43		25SW-02	6/3/2019	100%	3	3			27		41		43	
Perfluorononanoic acid (PFNA)	NG/L	3		25SW-02	6/3/2019	100%	3	3			2.7		3		2.7	
Perfluorooctane Sulfonamide (FOSA)	NG/L	0				0%	0	3			2.8	U	3	U	2.8	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	78		25SW-01	6/3/2019	100%	3	3			**78**		**62**		**53**	
Perfluorooctanoic acid (PFOA)	NG/L	120		25SW-02	6/3/2019	100%	3	3			**26**		**110**		**120**	
Perfluoropentanoic acid (PFPA)	NG/L	30		25SW-02	6/3/2019	100%	3	3			27		30		30	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0				0%	0	3			2.8	U	3	U	2.8	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0				0%	0	3			2.8	U	3	U	2.8	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0				0%	0	3			1.4	U	1.5	U	1.4	U
PFOS + PFOA Summation	NG/L	173		25SW-02	6/3/2019	100%	3	3	70	3	**104**		**172**		**173**	

Footnotes:
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U = non-detect, i.e. not detected at or above this value.
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.
3) Specific Chemical Classes (or Parameters) comments or notes regarding how data is displayed, compared to Action Levels, or represented in this table.

4) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.
- Bold values represent a results that is above EPA Drinking Water Health Advisory. ####
5) Criteria action level source document and web address.
- The EPA EPA PFOA & PFOS Drinking Water Health Advisory values were obtained from the provided links.
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April 2020 ESI Data Summary

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF, G-9
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

08 April 2020

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New York State Department of Environmental Conservation
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Albany, NY 12233-7015

Mr. Mark Sergott
Bureau of Environmental Exposure Investigation
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Albany, NY 12237

SUBJECT: Final Technical Memorandum for the PFAS Expanded Site Investigation (ESI) at the Fire House, SEAD 25 and SEAD 26 at Seneca Army Depot Activity in Romulus, NY; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

Dear Mr. Morse/Ms. Sweet/Mr. Sergott:

Please find attached the Final Technical Memorandum for the PFAS Expanded Site Investigation (ESI) at the Fire House, SEAD 25 and SEAD 26 at Seneca Army Depot Activity in Romulus, NY. This technical memo presents data gaps and recommendations for future investigation to evaluate the nature and extent of impacts on groundwater, surface water and soil at three sites impacted by PFAS constituents. Comments on the Draft technical memo were received from the New York State Department of Environmental Conservation (NYSDEC) / New York State Department of Health (NYSDOH) and US Environmental Protection Agency (USEPA) on 11 February 2020 and 20 March 2020, respectively. Responses to the comments are attached and were incorporated into the Final memorandum.

If you have any questions about the attached document, please call me at 347-271-0226.

Sincerely,

James T. Moore, PMP
Acting Base Environmental Coordinator
Corps of Engineers, Project Manager

cc: C. Heaton, CEHNC
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TECHNICAL MEMORANDUM

This Technical Memorandum provides a review of the data collected during Phase II of the Expanded Site Investigation (ESI) for per- and polyfluoroalkyl substances (PFAS) at the Fire House, SEAD 25, and SEAD 26 at the Seneca Army Depot Activity (SEDA or Depot) in Seneca County, New York. Based on the results collected during the Site Investigation and Phase I of the ESI, data gaps in the nature and extent of the site characterization and recommendations for the path forward are presented.

The Phase II PFAS field event was conducted during the fall of 2019. Groundwater wells were installed in September 2019 and the groundwater samples were collected in October 2019 from a total of 10 wells:

- 3 wells at the Fire House
- 5 wells at SEAD 25
- 2 wells at SEAD 26

The locations of the groundwater wells and a summary of the SI and ESI data are presented on Figures 1, 2A, and 2B. Analytical data for Phase I and Phase II are provided in Table 1.

Data Gap Evaluation and Recommendations

The goal of the ESI is to characterize the nature and extent of all potential media of concern. The identified data gaps and the associated recommendations for each of the three areas are presented below and proposed sample locations are presented in Figures 3 and 4.

Fire House:

Data Gaps	Recommendations for future investigation
• Source area not delineated to the north. Unknown whether the concentrations at MWFH-04 and MWFH-05 represent the Fire House source or if the source area extends further upgradient • Impacts to soil, surface water and stormwater runoff not evaluated • Impacts in bedrock are not defined	• Install 3 new wells (MWFH-06, MWFH-07, and MWFH-08) in an east-west line upgradient of the current wells MWFH-04 and MWFH-05 (between East Patrol Road and the SEDA boundary) to identify if there are impacts further upgradient of the Fire House • Evaluate surface water and drainage pathways between the Fire House and SEAD 25 and potential PFAS impacts • Sample identified surface water pathways (SWFH-01, SWFH-02, and SWFH-03) • After the source area is identified, install a deep/shallow bedrock well pair (MWFH-09/D) in the source area to evaluate deeper impacts. Install an additional bedrock well pair (MWFH-10/D) in the downgradient direction if the first well pair are impacted • Collect three subsurface (6 – 36 inches bgs) soil samples (SBFH-01, SBFH-02 and SBFH-03) in the suspected source area and include SPLP analysis • Collect a second round of PFAS groundwater samples from all previous locations to confirm presence and magnitude of PFAS concentrations in groundwater

SEAD-25:

Data Gaps	Recommendations for future investigation
• Impacts in the bedrock are not defined • Further evaluate surface water pathways, particularly downgradient of SW25-02 • Impacts to the source area soil are not defined • With consideration that the NYS promulgated standard will likely change to detections of PFOA or PFOS at or above 10 ng/L (from the current 70 ng/L), the groundwater downgradient of MW25-28 should be further evaluated to define location of the 10 ng/L contour.	• Install two deep/shallow bedrock well pairs and one bedrock well: one pair (MW25-31/D) in the source area between MW25-2 and MW25-9, one pair (MW25-34/D) at the downgradient confluence of local drainage discharges and a bedrock well (MW25-22D) near MW25-22 • Recollect surface water samples at locations SW25-01 and SW25-02 and collect additional surface water samples as previously proposed: downgradient of SW25-02 and in other drainages upgradient (SW25-03) and downgradient of the source area (SW25-04, SW25-05 and SW25-06) • Install new shallow well (MW25-32) downgradient of MW25-28 • Collect three subsurface (6 – 36 inches bgs) soil samples (SB25-17, SB25-18 and SB25-19) in the suspected source area and include SPLP analysis • Collect a second round of PFAS groundwater samples from all previous locations to confirm presence and magnitude of PFAS concentrations in groundwater

SEAD-26:

Data Gaps	Recommendations for future investigation
• Plume as currently defined is very narrow and the plume toe is not defined to less than 10 ng/L • Surface water is not characterized • Impacts to the source area soil are not defined • Impacts in the bedrock are not defined	• Add two wells (MW26-21 and MW26-22) side-gradient of MW26-20 (to the north and south) at a spacing similar to the spacing of MW26-15, MW26-16, MW26-17 to further define groundwater flow direction and plume width • Based on data from the two new wells, install three more shallow wells and one bedrock well (MW26-23, MW26-24/D, and MW26-25) further downgradient (west) close to the road to define the plume toe • Collect surface water samples (SW26-01 thru SW26-05) to characterize potential impacts to surface water • Install one deep/shallow bedrock well pair (MW26-28/D) and one bedrock well (MW26-32D): the well pair near the source (TMW26-3) and a the bedrock well downgradient (west) near shallow well MW26-16 to evaluate deeper impacts • Collect three subsurface (6 – 36 inches bgs) soil samples (SB26-13, SB26-14, SB26-15, SB26-16 and SB26-17) in the suspected source area and include SPLP analysis

	• Collect a second round of PFAS groundwater samples from all previous locations to confirm presence and magnitude of PFAS concentrations in groundwater

Notes:

1) Shallow wells will target the upper till/weathered bedrock water bearing zone and will be installed to a total depth approximately 3 to 5 feet into competent rock. The well screen will be 10 feet in length and will typically extend across the till and weathered bedrock interval. Deep wells will be drilled into competent rock and will have a 10-foot screen. The top of the deep well screen will be set approximately 30 feet below the top of competent rock. This depth is proposed such that the screen is set deep enough to be outside the influence of the surficial aquifer / bedrock aquifer interface and to avoid the potential for drawing down surface water. As the borehole is advanced through the competent bedrock, the geologist onsite will coordinate with the driller to identify any weak drilling zones and will examine the drill core for any natural fracture zones. These fracture zones may act as preferential transport pathways and the well screen depth may be adjusted to target these zones. Lastly the depth of these wells will be based on field conditions and may be deeper if the bedrock aquifer does not have sufficient yield to obtain a water sample.

We look forward to discussing this further. For questions, please contact Jim Moore at 917-790-8230 or James.T.Moore@usace.army.mil.

SEAD 25 PFOS/PFOA Exceedances Samples Collected during Site Investigation (2017)

Note: Stormwater flow within infrastructure in the Admin area is towards the south and west. Underground pipes in the Admin area transition to an open drainage ditch near MW25-20. Overland flow is towards the southwest.

MW25-6	
PFOA	140
PFOA/S	145.8

MW25-17	
PFOA	11,000
PFOA/S	13,600
PFOS	2,600

MW25-19	
PFOA/S	12,100
PFOS	2,100
PFOA	10,000

MW25-3	
PFOS	2,300 J
PFOA/S	9,800
PFOA	7,500 J

MW25-18	
PFOA	550
PFOA/S	570

MW25-8	
PFOS	8,300
PFOA	17,000
PFOA/S	25,300

MW25-1	
PFOA/S	10,490
PFOS	490
PFOA	10,000

MW25-15	
PFOA/S	7,380
PFOA	6,800 / 6,900
PFOS	490 / 480

MW25-9	
PFOA/S	19,400
PFOS	1,400
PFOA	18,000

MW25-10	
PFOA	2,000 / 2,100
PFOA/S	2,340
PFOS	250 / 240

MW25-2	
PFOA/S	92,900
PFOS	3,900
PFOA	89,000 J

MW25-13	
PFOA/S	71.4

0 40 80 160 240 320 Feet

MWFH-04	ng/L	
PFOS	4200	J+
PFOA	1300	

MWFH-05	ng/L	
PFOS	440	J+
PFOA	4100	J+

MWFH-01		
PFOS	**220**	
PFOA	**210**	J

MWFH-03	ng/L	
PFOS	ND	
PFOA	2.3	

MWFH-02	ng/L	
PFOS	6.85	
PFOA	22.5	

MW25-30	ng/L	
PFOS	ND	
PFOA	ND	

SW25-01	ng/L	
PFOS	**78**	
PFOA	26	

MW25-20	ng/L	
PFOS	ND	
PFOA	8.15	

SW25-02	ng/L	
PFOS	57.5	
PFOA	**115**	

MW25-25	ng/L	
PFOS	ND	
PFOA	0.79	J

MW25-24	ng/L	
PFOS	11	
PFOA	3.7	

MW25-29	ng/L	
PFOS	ND	
PFOA	0.53	J

MW25-21	ng/L	
PFOS	**140**	J
PFOA	**720**	J

MW25-22	ng/L	
PFOS	16	J
PFOA	**1000**	J+

MW25-23	ng/L	
PFOS	ND	
PFOA	3.35	

MW25-28	ng/L	
PFOS	8.1	
PFOA	11	

MW25-27	ng/L	
PFOS	ND	
PFOA	0.94	J

MW25-26	ng/L	
PFOS	ND	
PFOA	ND	

Former Fire House

See Inset

SEAD-16

SEAD-17

Local GW Flow Direction

Surface Water Flow Direction

Ordnance Road

1st Street

Administration Avenue

State Highway 96

East Patrol Road

Legend

- Groundwater Flow Direction
- Oct 2019 GW Contour (1ft interval)
- Surface Water Flow Direction
- Stormwater Drainage
- SEAD Boundary
- Approximate PID Area Boundary
- Surface Water Sample

Monitoring Wells

- PFAS SI
- PFAS ESI Phase I
- PFAS ESI Phase II

Chemical Name	Abbreviation	CAS Number
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorooctanoic acid	PFOA	335-67-1

Notes:
1) All lab results validated. Valid qualifiers shown.
2) PFOA and PFOS bolded when above EPA HA of 70 ng/L.
3) Local groundwater flow direction at SEAD 25 is radial. Predominant groundwater flow direction in the area of this figure is to the west and southwest.
4) Flow in drainage pipes and ditches is to the south, west, and southwest.
5) Wells shown in the inset near the former Fire Training Pad were sampled during the 2017 Site Investigation (SI).
ng/L = nanograms per liter
ND = Not Detected, J = Estimated, J+ = Estimated, possibly biased high

0 200 400 800 1,200 1,600 Feet

SENECA ARMY DEPOT ACTIVITY
SEAD 25 and SEAD 26 PFAS ESI

FIGURE 1 - SEAD 25 and Fire House
PFAS ESI PFOS/PFOA Results - December 2019

1 in = 400 ft | January 2020

\\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23J02 - GIS\PFAS\ESI\SEAD25FH_PFAS_ESI_ValidResults_121719.mxd lxh 1/7/2020

Notes:
1) All lab results are validated. Valid qualifiers shown.
2) PFOA and PFOS bolded when above 70 ng/L.
3) The source area near the former bentonite lined pit was initially investigated during the Site Investigation (SI) using temporary well (TMW) locations and grab samples in 2017. These data points are shown on Figure 2B.
ng/L = nanograms per liter
ND = Not Detected, J = Estimated

Chemical Name	Abbreviation	CAS Number
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorooctanoic acid	PFOA	335-67-1

MW26-12	ng/L	
PFOS	ND	
PFOA	0.52	J

MW26-13	ng/L	
PFOS	ND	
PFOA	7.9	

MW26-14	ng/L	
PFOS	6.2	
PFOA	4.5	

MW26-18	ng/L	
PFOS	11	
PFOA	18	

MW26-15	ng/L	
PFOS	ND	
PFOA	0.54	J

MW26-16	ng/L	
PFOS	**785**	J
PFOA	**330**	J+

MW26-17	ng/L	
PFOS	ND	
PFOA	3.7	

MW26-20	ng/L	
PFOS	9.75	J
PFOA	24.5	

Storage Area
Burned Automobiles
Trailer
Fire Tower
Former Bentonite Lined Pit
Autos
Helicopter Fuselage
Former Drum Storage Area
Containers
Drums
Dumpster
742
741
740
739
738
737
736
735
734
733
732
731
730
729
728

Legend

- Groundwater Flow Direction
- Oct 2019 GW Contour (1ft interval)
- Surface Water Flow Direction
- Stormwater Drainage
- Railways
- Fenceline
- Approximate PID Area Boundary

Monitoring Wells

- PFAS ESI Phase I
- PFAS ESI Phase II

0 75 150 300 450 600 Feet

Well MW26-20 is approximately 900ft downgradient of MW26-

0 375 750 1,500 Feet

SENECA ARMY DEPOT ACTIVITY
SEAD 25 and SEAD 26 PFAS ESI

FIGURE 2A - SEAD 26 PFAS ESI
PFOS/PFOA Results

1 in = 150 ft | January 2020

\\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\Fig 2A_SEAD26_PFAS_ESI_ValidResults_121719.mxd lxh 1/9/2020

Notes:
1) All lab results are validated. Valid qualifiers shown.
2) PFOA and PFOS bolded when above 70 ng/L.
3) Groundwater samples were collected from 1-inch temporary well points. Due to the low volume of water within the wells and limited recharge, grab samples were collected. The data collection method is of a different quality than standard low flow sampling at permanent wells.
4) Groundwater contours generated using data from the permanent wells shown in Figure 2A.
ng/L = nanograms per liter
ND = Not Detected, J = Estimated

Chemical Name	Abbreviation	CAS Number
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorooctanoic acid	PFOA	335-67-1

TMW-26-1	ng/L
PFOS	4.9 J
PFOA	1.3 J

TMW-26-2	ng/L
PFOS	64
PFOA	**79**

TMW-26-3	ng/L
PFOS	**240**
PFOA	**340**

TMW-26-4	ng/L
PFOS	4.9
PFOA	41

TMW-26-5	ng/L
PFOS	3 J
PFOA	3.6

TMW-26-6	ng/L
PFOS	3.5 J
PFOA	**170**

TMW-26-7	ng/L
PFOS	2 J
PFOA	**240**

TMW-26-8	ng/L
PFOS	8.8
PFOA	11

TMW26-1
TMW26-2
TMW26-3
TMW26-4
TMW26-5
TMW26-6
TMW26-7
TMW26-8

Storage Area
Trailer
Fire Tower
Burned Automobiles
Former Bentonite Lined Pit
Autos
Helicopter Fuselage
Former Drum Storage Area
Dumpster
Containers
Drums

742
741
740
739
738
737
736
735
734
733
732
731
730
728

N
E
S
W

Legend

- Groundwater Flow Direction
- Oct 2019 GW Contour (1ft interval)
- Surface Water Flow Direction
- Stormwater Drainage
- Railways
- Fenceline
- Approximate PID Area Boundary

Monitoring Wells

- PFAS SI

0 75 150 300 450 600 Feet

SENECA ARMY DEPOT ACTIVITY
SEAD 25 and SEAD 26 PFAS ESI

FIGURE 2B - SEAD 26 PFAS SI
PFOS/PFOA Results

1 in = 150 ft | January 2020

\\MABOS07FS01\Projects\PITProjects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\Fig 2B_SEAD26_PFAS_ESI_ValidResults_121719.mxd lxh 1/9/2020

748000 749000 750000 751000 752000

1000000 999000 998000 997000

SEAD 25 Former Fire Training Pad Area

Note: Stormwater flow within infrastructure in the Admin area is towards the south and west. Underground pipes in the Admin area transition to an open drainage ditch near MW25-20. Overland flow is towards the southwest.

MW25-6 MW25-17 MW25-19 RA Excavated Area MW25-18 MW25-8 SB25-18 MW25-3 SB25-19 MW25-1 MW25-2 MW25-31/D MW25-9 SB25-17 MW25-15 MW25-10

0 25 50 100 150 200 Feet

N W E S

SEAD-16 Local GW Flow Direction MW25-30 SW25-01 MW25-20 Surface Water Flow Direction SEAD-17 Local GW Flow Direction MW25-29 SW25-02 MW25-21 SB25-18 MW25-31/D SB25-19 SB25-17 See Inset Ordnance Road MW25-22D MW25-22 MW25-23 SW25-04 MW25-27 MW25-26 SW25-05 MW25-28 Surface Water Flow Direction Ordnance Road 1st Street SW25-06 MW25-32 MW25-34/D

MWFH-06 MWFH-08 MWFH-07 SBFH-03 East Patrol Road MWFH-09/D MWFH-05 East Patrol Road MWFH-04 SBFH-01 SBFH-02 MWFH-01 MWFH-02 MWFH-03 MWFH-10/D SWFH-03 SW-FH02 SWFH-01 MW25-25 MW25-33 MW25-24 Surface Water Flow Direction SW25-03 State Highway 96 East Patrol Road Administration Avenue

0 200 400 800 1,200 1,600 Feet

Notes:
1) Local shallow groundwater flow direction at SEAD 25 is radial. Predominant groundwater flow direction in the area of this figure is to the west and southwest.
2) Flow in drainage pipes and ditches is to the south, west, and southwest.
3) All sampling locations tentative based on accessibility and field conditions. MWFH-10/D will be installed if bedrock impacts are observed at the Fire House or SEAD 25 shallow/bedrock pairs.

Legend

- Major Drainage
- Minor Drainage
- Fire House
- SEAD Boundary
- Approximate PID Area Boundary
- Surface Water Flow Direction
- Groundwater Flow Direction

Proposed Samples

- Shallow Well
- Shallow/Bedrock Well Pair
- Bedrock Well
- Surface Water Sample
- Soil Sample

Existing Wells

- PFAS SI
- PFAS ESI Phase I
- PFAS ESI Phase II

SENECA ARMY DEPOT ACTIVITY
SEAD 25 and SEAD 26 PFAS ESI

FIGURE 3 - SEAD 25 and Fire House Proposed Sampling Locations - April 2020

1 in = 400 ft	April 2020

\\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\SEAD25FH_PFAS_ESI_ProposedSampling_032320v3.mxd lxh 4/2/2020

747000 748000 749000 750000 751000

994000 993000 992000 991000

N W E S

SEAD 26 FormerTraining Area

Fire Tower
Trailer
Containers
Burned Automobiles
Drums
Former Bentonite Lined Pit
Storage Area
Autos
Helicopter Fuselage
Former Drum Storage Area

MW26-15 MW26-18 MW26-26 SB26-13 MW26-13 MW26-27 MW26-12 MW26-16 MW26-28/D SB26-14 SB26-15 MW26-32D SW26-02 MW26-14 MW26-17 MW26-29 SB26-16 MW26-30 SB26-17 SW26-01 MW26-19 MW26-31 SW26-05 SW26-03 MW26-21 MW26-23 SW26-04 MW26-20 MW26-24/D MW26-22 MW26-25

0 75 150 300 450 600 Feet

0 200 400 800 1,200 1,600 Feet

Notes:
1) Predominant groundwater flow direction in the area of this figure is to the west.
2) Flow in drainage ditches surrounding SEAD 26 is to the north and south feeding into drainage ditches flowing to the west.
3) All sampling locations tentative based on accessibility and field conditions. The locations of MW26-23, MW26-24/D and MW26-25 will be finalized after the results of MW26-21 and MW26-22 are received.

Legend

- Major Drainage
- Minor Drainage
- SEAD Boundary
- Approximate PID Area Boundary
- Surface Water Flow Direction
- Groundwater Flow Direction

Proposed Samples

- Shallow Well
- Shallow/Bedrock Well Pair
- Bedrock Well
- Surface Water Sample
- Soil Sample

Existing Wells

- PFAS ESI Phase I
- PFAS ESI Phase II

SENECA ARMY DEPOT ACTIVITY
SEAD 25 and SEAD 26 PFAS ESI

FIGURE 4 - SEAD 26
Proposed Sampling Locations - April 2020

1 in = 400 ft	April 2020

\\MABOS07FS01\Projects\PTProjects\Huntsville WERS\Seneca LTM, TO 23102 - GIS\PFAS\ESI\SEAD26_PFAS_ESI_ProposedSampling_032320v1.mxd lxh 4/2/2020

Table 1
Fire House
ESI PFAS GW Results
Seneca Army Depot Activity

Area							FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
Loc ID							MWFH-01		MWFH-02		MWFH-02		MWFH-03		MWFH-04		MWFH-04		MWFH-05	
Matrix							GW		GW		GW		GW		GW		GW		GW	
Sample ID							FHESI20001		FHESI20002		FHESI20004		FHESI20003		FHESI20005		FHESI20007		FHESI20006	
Sample Date							5/24/2019		5/24/2019		5/24/2019		10/16/2019		10/16/2019		10/16/2019		10/18/2019	
QC Type							SA		SA		DU		SA		SA		DU		SA	
Study ID							2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI	
Parameter	Unit	Max Detected Value		Num of Detects	Num of Analyses	Action Level	Num of Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																					
6:2 FTS	NG/L	6,200		6	7			160		7.4	J	6.7	J	19	U	5,000		6,200		260	J
8:2 FTS	NG/L	2,100		3	7			27		9.5	U	9.4	U	9.7	U	1,900	J	2,100		190	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	7			9.4	U	9.5	U	9.4	U	9.7	U	980	U	1,000	U	190	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	1	7			4	J	9.5	U	9.4	U	9.7	U	980	U	1,000	U	190	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	87		6	7			24		5.1		4.8		0.97	U	53	J	55	J	87	
Perfluorobutyric acid (PFBA)	NG/L	350		7	7			75		12		11	J-	27		350		340		260	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	7			1.4	U	1.4	U	1.4	U	1.5	U	150	U	150	U	29	U
Perfluorodecanoic acid (PFDA)	NG/L	0.5	J	1	7			0.5	J	0.95	U	0.94	U	0.97	U	98	U	100	U	19	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	7			1.4	U	1.4	U	1.4	U	1.5	U	150	U	150	U	29	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	48	J	5	7			4.7		0.35	J	0.94	U	0.97	U	39	J	48	J	16	J
Perfluoroheptanoic acid (PFHpA)	NG/L	630		7	7			99		15		16		1	J	630		630		510	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	1,800		7	7			300	J	40		37		0.94	J	1,200		1,200		1,800	
Perfluorohexanoic acid (PFHxA)	NG/L	980		7	7			280	J	35		32		10		920		980		820	
Perfluorononanoic acid (PFNA)	NG/L	150	J	4	7			7.5		1.4	U	1.4	U	1.5	U	150	J	140	J	42	
Perfluorooctane Sulfonamide (FOSA)	NG/L	8.3		1	7			8.3		2.8	U	2.8	U	2.9	U	290	U	300	U	58	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	4,600	J+	6	7			220		7.4		6.3		2.9	U	3,800	J+	4,600	J+	440	J+
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	7	7			210	J	23		22		2.3		1,300	J+	1,300	J+	4,100	J+
Perfluoropentanoic acid (PFPA)	NG/L	1,200		7	7			240		37		37		20		1,200		1,200		860	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	7			2.8	U	2.8	U	2.8	U	2.9	U	290	U	300	U	58	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	7			2.8	U	2.8	U	2.8	U	2.9	U	290	U	300	U	58	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	7			1.4	U	1.4	U	1.4	U	1.5	U	150	U	150	U	29	U
PFOS + PFOA Summation	NG/L	5,900	J	7	7	70	4	**430**	**J**	30.4		28.3		5.2		**5100**	**J**	**5900**	**J**	**4540**	**J**

Footnotes:

1) Number of Analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during the data validation.
[blank] = detect, i.e. detected chemical result value.
U = non-detect, i.e. not detected at or above this value.
J+ = The result is an estimated quantity, but the result may be biased high.
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.
J- = The result is an estimated quantity, but the result may be biased low.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.
- Bold values represent a results that is above EPA Drinking Water Health Advisory. ####

4) Criteria action level source document and web address.
- The EPA EPA PFOA & PFOS Drinking Water Health Advisory values were obtained from the provided links.
https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos

Table 2
SEAD-25
ESI PFAS GW Results
Seneca Army Depot Activity

Area								SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
Loc ID								MW25-20		MW25-20		MW25-21		MW25-22		MW25-23		MW25-23		MW25-24	
Matrix								GW		GW		GW		GW		GW		GW		GW	
Sample ID								25ESI20001		25ESI20007		25ESI20002		25ESI20003		25ESI20004		25ESI20008		25ESI20005	
Sample Date								5/28/2019		5/28/2019		5/31/2019		5/29/2019		5/29/2019		5/29/2019		5/30/2019	
QC Type								SA		DU		SA		SA		SA		DU		SA	
Study ID								2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI	
Parameter	Unit	Max Detected Value		Num of Detects	Num of Analyses	Action Level	Num of Detects Above Standard-1	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q
Per- and polyfluoroalkyl substances (PFAS)																					
6:2 FTS	NG/L	0		0	14			19	U	19	U	19	UJ	19	U	19	U	19	UJ	19	U
8:2 FTS	NG/L	0		0	14			9.4	U	9.6	U	9.4	UJ	9.3	U	9.4	U	9.5	UJ	9.6	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	14			9.4	U	9.6	U	9.4	UJ	9.3	U	9.4	U	9.5	UJ	9.6	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	14			9.4	U	9.6	U	9.4	UJ	9.3	U	9.4	U	9.5	UJ	9.6	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	58	J	8	14			1.8	J	1.8	J	58	J	51		0.94	U	0.95	UJ	0.78	J
Perfluorobutyric acid (PFBA)	NG/L	58	J	12	14			6.3		6.3		58	J	43		4.4		4.6	J	6.7	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	14			1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	U	1.4	UJ	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	0		0	14			0.94	U	0.96	U	0.94	UJ	0.93	U	0.94	U	0.95	UJ	0.96	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	14			1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	U	1.4	UJ	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	5.5	J	2	14			0.94	U	0.96	U	5.5	J	0.92	J	0.94	U	0.95	UJ	0.96	U
Perfluoroheptanoic acid (PFHpA)	NG/L	32		9	14			1.8	J	1.8	J	28	J	32		0.62	J	0.69	J	4.4	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	510	J	11	14			8.2		8.4		310	J	510	J	0.94	U	0.95	UJ	9.2	
Perfluorohexanoic acid (PFHxA)	NG/L	280	J	11	14			6.4		6.9		250	J	280	J	3		2.6	J	7.3	
Perfluorononanoic acid (PFNA)	NG/L	1.2	J	5	14			1.4	U	1.4	U	0.5	J	0.69	J	1.4	U	1.4	UJ	0.5	J
Perfluorooctane Sulfonamide (FOSA)	NG/L	0		0	14			2.8	U	2.9	U	2.8	UJ	2.8	U	2.8	U	2.9	UJ	2.9	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	140	J	5	14			2.8	U	2.9	U	140	J	16	J	2.8	U	2.9	UJ	11	
Perfluorooctanoic acid (PFOA)	NG/L	1,000	J+	12	14			8.7		7.6		720	J	1,000	J+	3		3.7	J	3.7	
Perfluoropentanoic acid (PFPA)	NG/L	110	J	10	14			6.7		6.1		110	J	89		4.4		4.3	J	9.1	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	14			2.8	U	2.9	U	2.8	UJ	2.8	U	2.8	U	2.9	UJ	2.9	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	14			2.8	U	2.9	U	2.8	UJ	2.8	U	2.8	U	2.9	UJ	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	14			1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	U	1.4	UJ	1.4	U
PFOS + PFOA Summation	NG/L	1,016	J	12	14	70	2	11.5		10.5		**860**	**J**	**1016**	**J**	5.8		6.6	J	14.7	

Footnotes:

1) Number of Analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during the data validation.
[blank] = detect, i.e. detected chemical result value.
U = non-detect, i.e. not detected at or above this value.
J+ = The result is an estimated quantity, but the result may be biased high.
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.
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3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.
- Bold values represent a results that is above EPA Drinking Water Health Advisory. ####

4) Criteria action level source document and web address.
- The EPA EPA PFOA & PFOS Drinking Water Health Advisory values were obtained from the provided links.
https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos

Table 2
SEAD-25
ESI PFAS GW Results
Seneca Army Depot Activity

Area								SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
Loc ID								MW25-25		MW25-26		MW25-27		MW25-28		MW25-28		MW25-29	
Matrix								GW		GW		GW		GW		GW		GW	
Sample ID								25ESI20006		25ESI20009		25ESI20010		25ESI20011		25ESI20014		25ESI20012	
Sample Date								5/30/2019		10/17/2019		10/16/2019		10/18/2019		10/18/2019		10/17/2019	
QC Type								SA		SA		SA		SA		DU		SA	
Study ID								2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI	
Parameter	Unit	Max Detected Value		Num of Detects	Num of Analyses	Action Level	Num of Detects Above Standard-1	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q
Per- and polyfluoroalkyl substances (PFAS)																			
6:2 FTS	NG/L	0		0	14			19	U	19	U	19	U	20	U	20	U	20	U
8:2 FTS	NG/L	0		0	14			9.4	U	9.6	U	9.6	U	9.8	U	10	U	9.8	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	14			9.4	U	9.6	U	9.6	U	9.8	U	10	U	9.8	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	14			9.4	U	9.6	U	9.6	U	9.8	U	10	U	9.8	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	58	J	8	14			0.78	J	0.96	U	0.96	U	1.2	J	0.97	J	0.98	U
Perfluorobutyric acid (PFBA)	NG/L	58	J	12	14			4.1		2.3	U	20		10		9.7		2	U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	14			1.4	U	1.4	U	1.4	U	1.5	U	1.5	U	1.5	U
Perfluorodecanoic acid (PFDA)	NG/L	0		0	14			0.94	U	0.96	U	0.96	U	0.98	U	1	U	0.98	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	14			1.4	U	1.4	U	1.4	U	1.5	U	1.5	U	1.5	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	5.5	J	2	14			0.94	U	0.96	U	0.96	U	0.98	U	1	U	0.98	U
Perfluoroheptanoic acid (PFHpA)	NG/L	32		9	14			1.4	U	1.4	U	1.4	U	4.5		4		1.5	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	510	J	11	14			3.3		0.96	U	0.43	J	12		11		0.37	J
Perfluorohexanoic acid (PFHxA)	NG/L	280	J	11	14			0.54	J	0.96	U	1.4	J	10		9.6		0.98	U
Perfluorononanoic acid (PFNA)	NG/L	1.2	J	5	14			1.4	U	1.4	U	1.4	U	1.2	J	1.2	J	1.5	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	0		0	14			2.8	U	2.9	U	2.9	U	2.9	U	3	U	2.9	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	140	J	5	14			2.8	U	2.9	U	2.9	U	7.9		8.3		2.9	U
Perfluorooctanoic acid (PFOA)	NG/L	1,000	J+	12	14			0.79	J	1.4	U	0.94	J	11		11		0.53	J
Perfluoropentanoic acid (PFPA)	NG/L	110	J	10	14			0.94	U	0.96	U	1.4	J	11		9.8		0.98	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	14			2.8	U	2.9	U	2.9	U	2.9	U	3	U	2.9	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	14			2.8	U	2.9	U	2.9	U	2.9	U	3	U	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	14			1.4	U	1.4	U	1.4	U	1.5	U	1.5	U	1.5	U
PFOS + PFOA Summation	NG/L	1,016	J	12	14	70	2	3.59	J	4.3	U	3.84	J	18.9		19.3		3.43	J

Footnotes:

1) Number of Analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during the data validation.
[blank] = detect, i.e. detected chemical result value.
U = non-detect, i.e. not detected at or above this value.
J+ = The result is an estimated quantity, but the result may be biased high.
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.
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3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.
- Bold values represent a results that is above EPA Drinking Water Health Advisory. ####

4) Criteria action level source document and web address.
- The EPA EPA PFOA & PFOS Drinking Water Health Advisory values were obtained from the provided links.
https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos

Table 3
SEAD-26
ESI PFAS GW Results
Seneca Army Depot Activity

Area								SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26	
Loc ID								MW26-12		MW26-13		MW26-14		MW26-15		MW26-16		MW26-16	
Matrix								GW		GW		GW		GW		GW		GW	
Sample ID								26ESI20001		26ESI20002		26ESI20003		26ESI20004		26ESI20005		26ESI20007	
Sample Date								5/31/2019		5/30/2019		5/31/2019		5/31/2019		5/31/2019		5/31/2019	
QC Type								SA		SA		SA		SA		SA		DU	
Study ID								2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI	
Parameter	Unit	Max Detected Value		Num of Detects	Num of Analyses	Action Level	Num of Detects Above	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q
Per- and polyfluoroalkyl substances (PFAS)																			
6:2 FTS	NG/L	35	J	4	10			19	U	8.8	J	19	U	19	UJ	29	J	35	J
8:2 FTS	NG/L	0		0	10			9.5	U	9.6	U	9.5	U	9.4	UJ	9.5	U	9.5	UJ
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	10			9.5	U	9.6	U	9.5	U	9.4	UJ	9.5	U	9.5	UJ
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	10			9.5	U	9.6	U	9.5	U	9.4	UJ	9.5	U	9.5	UJ
Perfluorobutanesulfonic acid (PFBS)	NG/L	48		8	10			0.95	U	1	J	3		0.94	UJ	48		46	J
Perfluorobutyric acid (PFBA)	NG/L	220		8	10			1.4	U	63		18		1.4	UJ	220		210	J
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	10			1.4	U	1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	UJ
Perfluorodecanoic acid (PFDA)	NG/L	0		0	10			0.95	U	0.96	U	0.95	U	0.94	UJ	0.95	U	0.95	UJ
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	10			1.4	U	1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	UJ
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	14		4	10			0.95	U	0.96	U	0.95	U	0.94	UJ	14		12	J
Perfluoroheptanoic acid (PFHpA)	NG/L	360		8	10			1.4	U	21		5.5		1.4	UJ	360		340	J
Perfluorohexanesulfonic acid (PFHxS)	NG/L	610		7	10			0.95	U	11		12		0.94	UJ	610		610	J
Perfluorohexanoic acid (PFHxA)	NG/L	660	J	9	10			0.48	J	69		26		0.94	UJ	650		660	J
Perfluorononanoic acid (PFNA)	NG/L	38	J	3	10			1.4	U	1.4	U	1.4	U	1.4	UJ	37		38	J
Perfluorooctane Sulfonamide (FOSA)	NG/L	0		0	10			2.9	U	2.9	U	2.9	U	2.8	UJ	2.8	U	2.8	UJ
Perfluorooctanesulfonic acid (PFOS)	NG/L	800	J	6	10			2.9	U	2.9	U	6.2		2.8	UJ	770		800	J
Perfluorooctanoic acid (PFOA)	NG/L	330	J+	10	10			0.52	J	7.9		4.5		0.54	J	330	J+	330	J
Perfluoropentanoic acid (PFPA)	NG/L	720		9	10			0.64	J	120		20		0.94	UJ	720		720	J
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	10			2.9	U	2.9	U	2.9	U	2.8	UJ	2.8	U	2.8	UJ
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	10			2.9	U	2.9	U	2.9	U	2.8	UJ	2.8	U	2.8	UJ
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	10			1.4	U	1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	UJ
PFOS + PFOA Summation	NG/L	1,130	J	10	10	70	2	3.42	J	10.8		10.7		3.34	J	**1100**	**J**	**1130**	**J**

Footnotes:

1) Number of Analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during the data validation.
[blank] = detect, i.e. detected chemical result value.
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J+ = The result is an estimated quantity, but the result may be biased high.
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3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.
- Bold values represent a results that is above EPA Drinking Water Health Advisory. ####

4) Criteria action level source document and web address.
- The EPA EPA PFOA & PFOS Drinking Water Health Advisory values were obtained from the provided links.
https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos

Table 3
SEAD-26
ESI PFAS GW Results
Seneca Army Depot Activity

Area								SEAD-26		SEAD-26		SEAD-26		SEAD-26	
Loc ID								MW26-17		MW26-18		MW26-20		MW26-20	
Matrix								GW		GW		GW		GW	
Sample ID								26ESI20006		26ESI20008		26ESI20010		26ESI20012	
Sample Date								5/31/2019		10/17/2019		10/18/2019		10/18/2019	
QC Type								SA		SA		SA		DU	
Study ID								2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI		2019 PFAS ESI	
Parameter	Unit	Max Detected Value		Num of Detects	Num of Analyses	Action Level	Num of Detects Above	Value	Q	Value	Q	Value	Q	Value	Q
Per- and polyfluoroalkyl substances (PFAS)															
6:2 FTS	NG/L	35	J	4	10			19	U	12	J	19	U	20	U
8:2 FTS	NG/L	0		0	10			9.5	U	9.8	U	9.7	U	9.9	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	10			9.5	U	9.8	U	9.7	U	9.9	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	10			9.5	U	9.8	U	9.7	U	9.9	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	48		8	10			0.56	J	3.8		23		24	
Perfluorobutyric acid (PFBA)	NG/L	220		8	10			33		54		160		160	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	10			1.4	U	1.5	U	1.5	U	1.5	U
Perfluorodecanoic acid (PFDA)	NG/L	0		0	10			0.95	U	0.98	U	0.97	U	0.99	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	10			1.4	U	1.5	U	1.5	U	1.5	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	14		4	10			0.95	U	0.98	U	0.47	J	0.59	J
Perfluoroheptanoic acid (PFHpA)	NG/L	360		8	10			15		28		74		77	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	610		7	10			0.95	U	20		120		120	
Perfluorohexanoic acid (PFHxA)	NG/L	660	J	9	10			83		69		240		250	
Perfluorononanoic acid (PFNA)	NG/L	38	J	3	10			1.4	U	0.61	J	1.5	U	1.5	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	0		0	10			2.8	U	2.9	U	2.9	U	3	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	800	J	6	10			2.8	U	11		9.5	J	10	J
Perfluorooctanoic acid (PFOA)	NG/L	330	J+	10	10			3.7		18		24		25	
Perfluoropentanoic acid (PFPA)	NG/L	720		9	10			130		130		340		350	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	10			2.8	U	2.9	U	2.9	U	3	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	10			2.8	U	2.9	U	2.9	U	3	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	10			1.4	U	1.5	U	1.5	U	1.5	U
PFOS + PFOA Summation	NG/L	1,130	J	10	10	70	2	6.5		29		33.5		35	

Footnotes:

1) Number of Analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during the data validation.
[blank] = detect, i.e. detected chemical result value.
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Table 4
Well Construction Details
PFAS ESI
Seneca Army Depot Activity

Site	Well ID	Easting	Northing	Well Installation Date	Ground Elevation (ft)	TOC Elevation (ft)	Well Depth (ft BGS)	Screen length (ft)	Screen Interval (ft BGS)
Fire House	MWFH-01	752049.49	999522.45	5/9/2019	753.59	753.34	15.00	10	5-15
Fire House	MWFH-02	751993.03	999412.58	5/9/2019	752.49	752.32	15.00	10	5-15
Fire House	MWFH-03	752255.46	999435.95	5/9/2019	752.95	752.48	15.00	10	5-15
Fire House	MWFH-04	751952.14	999706.22	9/10/2019	753.23	752.94	18.50	10	8-18
Fire House	MWFH-05	752174.07	999766.04	9/13/2019	755.68	755.56	20.50	10	10-20
SEAD-25	MW25-1	751123.93	998030.66	12/3/1995	740.30	743.00	7.53	1	3.1-4.1
SEAD-25	MW25-2	750974.61	998024.30	11/7/1993	743.80	746.36	11.02	4	3.4-7.4
SEAD-25	MW25-3	750926.49	998079.43	11/7/1993	743.30	746.34	NR	2	4-6
SEAD-25	MW25-6	751007.56	998276.99	9/25/1995	742.20	744.44	13.97	6.8	4.3-11.1
SEAD-25	MW25-8	750855.55	998077.31	9/26/1995	741.40	742.46	5.16	0.8	3.2-4
SEAD-25	MW25-9	750898.14	998004.15	9/26/1995	741.30	742.36	5.15	0.8	3.2-4
SEAD-25	MW25-10	750999.26	997966.26	9/27/1995	741.80	743.01	6.13	2	3.2-5.2
SEAD-25	MW25-13	750869.38	997864.81	10/11/1995	737.90	739.64	5.25	0.8	2.7-3.5
SEAD-25	MW25-15	750764.54	997972.61	10/10/1995	739.60	741.00	6.96	1.5	3.9-5.4
SEAD-25	MW25-17	750964.19	998188.42	10/16/1995	742.20	743.94	11.02	4.5	4.6-9.1
SEAD-25	MW25-18	751083.15	998116.36	10/16/1995	743.10	744.35	10.91	4.5	4.4-8.9
SEAD-25	MW25-19	750763.18	998136.67	10/7/1995	740.10	741.95	10.93	4.5	5.3-9.8
SEAD-25	MW25-20	750817.95	998381.89	5/10/2019	740.78	740.78	14.20	10	4.2-14.2
SEAD-25	MW25-21	750289.25	997965.70	5/8/2019	732.71	732.44	10.00	5	5-10
SEAD-25	MW25-22	750616.93	997729.83	5/13/2019	733.73	733.70	14.50	10	4.5-14.5
SEAD-25	MW25-23	751122.67	997618.25	5/8/2019	738.59	738.54	15.00	10	5-15
SEAD-25	MW25-24	751884.91	998241.02	5/17/2019	742.89	742.77	10.00	5	5-10
SEAD-25	MW25-25	751510.44	998499.12	5/16/2019	743.93	743.74	10.00	5	5-10
SEAD-25	MW25-26	750780.65	997444.54	9/11/2019	733.56	733.10	14.00	10	4-14
SEAD-25	MW25-27	750335.37	997408.09	9/11/2019	733.71	733.65	15.00	10	5-15
SEAD-25	MW25-28	749900.61	997367.09	9/10/2019	731.33	731.68	13.50	5	6.5-11.5
SEAD-25	MW25-29	749756.27	997963.82	9/11/2019	735.06	734.92	19.00	10	7-17
SEAD-25	MW25-30	750274.55	998536.20	9/13/2019	736.28	736.13	17.00	10	7-17
SEAD-26	MW26-12	751394.83	992289.86	5/14/2019	750.90	750.64	13.00	8	5-13
SEAD-26	MW26-13	751174.55	992370.89	5/13/2019	753.90	753.90	13.00	5	8-13
SEAD-26	MW26-14	751189.79	992104.88	5/14/2019	753.21	753.02	15.00	10	5-15
SEAD-26	MW26-15	750486.01	992470.37	5/15/2019	738.68	738.50	10.00	5	5-10
SEAD-26	MW26-16	750528.32	992217.67	5/15/2019	737.04	736.50	10.00	5	5-10
SEAD-26	MW26-17	750582.89	991952.00	5/16/2019	736.90	736.92	10.00	5	5-10
SEAD-26	MW26-18	750947.81	992478.14	9/16/2019	740.51	740.61	15.00	10	5-15
SEAD-26	MW26-20	749593.83	992246.23	9/12/2019	721.70	721.64	13.50	10	3.5-13.5
SEAD-26	TMW-26-1	751181.99	992926.61	4/19/2017	748.39	751.84	14.00	10	4-14
SEAD-26	TMW-26-2	751292.42	992292.13	4/19/2017	752.43	755.25	10.00	9	1-10
SEAD-26	TMW-26-3	751112.11	992261.53	4/19/2017	751.70	753.34	12.00	10	2-12
SEAD-26	TMW-26-4	751207.53	991605.07	4/19/2017	751.61	755.01	10.00	9	1-10
SEAD-26	TMW-26-5	751102.92	992667.05	4/19/2017	754.18	757.15	14.50	10	4.5-14.5
SEAD-26	TMW-26-6	751102.81	992475.09	4/19/2017	752.29	756.14	14.00	10	4-14
SEAD-26	TMW-26-7	751111.06	991975.13	4/19/2017	752.40	753.70	12.00	10	2-12
SEAD-26	TMW-26-8	751125.86	991711.85	4/19/2017	750.35	752.97	10.00	9	1-10

Footnotes:

1) All wells are 2-inches in diameter and PVC construction

2) Horizontal coordinates referenced to New York State Plane Central (US ft), NAD83. Vertical datum is NAVD88.

3) Temporary wells (TMW26-1 through TMW26-8) were not surveyed. Coordinates are approximate. Ground elevations sourced from USGS Elevation Point Query Service. TOC elevation is approximate.

Table 5
Groundwater Elevation Data
PFAS ESI
Seneca Army Depot Activity

Well	Date Measured	TOC Elevation (ft)	Measured Well Depth (ft Below TOC)	Depth to Groundwater (ft Below TOC)	Groundwater Elevation (ft)	Saturated Thickness (ft)
MWFH-01	10/14/2019	753.34	15.90	9.39	743.95	6.51
MWFH-02	10/14/2019	752.32	14.70	9.41	742.91	5.29
MWFH-03	10/14/2019	752.48	16.01	9.16	743.32	6.85
MWFH-04	10/14/2019	752.94	16.90	8.75	744.19	8.15
MWFH-05	10/14/2019	755.56	19.28	8.93	746.63	10.35
MW25-1	10/14/2019	743.00	7.53	6.96	736.04	0.57
MW25-2	10/14/2019	746.36	11.02	6.47	739.89	4.55
MW25-3	10/14/2019	746.34	NA	NA	NA	NA
MW25-6	10/14/2019	744.44	13.97	9.5	734.94	4.47
MW25-8	10/14/2019	742.46	5.16	5.15	737.31	0.01
MW25-9	10/14/2019	742.36	5.15	5	737.36	0.15
MW25-10	10/14/2019	743.01	6.13	DRY	DRY	DRY
MW25-13	10/14/2019	739.64	5.25	5.05	734.59	0.20
MW25-15	10/14/2019	741.00	6.96	6.95	734.05	0.01
MW25-17	10/14/2019	743.94	11.02	8.35	735.59	2.67
MW25-18	10/14/2019	744.35	10.91	8.01	736.34	2.90
MW25-19	10/14/2019	741.95	10.93	9.65	732.30	1.28
MW25-20	10/14/2019	740.78	13.10	7.11	733.67	5.99
MW25-21	10/14/2019	732.44	8.70	1.08	731.36	7.62
MW25-22	10/14/2019	733.70	14.18	1.7	732.00	12.48
MW25-23	10/14/2019	738.54	13.61	4.79	733.75	8.82
MW25-24	10/14/2019	742.77	9.59	2.59	740.18	7.00
MW25-25	10/14/2019	743.74	9.59	2.17	741.57	7.42
MW25-26	10/14/2019	733.10	13.20	0.5	732.60	12.70
MW25-27	10/14/2019	733.65	14.55	2.1	731.55	12.45
MW25-28	10/14/2019	731.68	13.00	0.38	731.30	12.62
MW25-29	10/14/2019	734.92	16.90	3.35	731.57	13.55
MW25-30	10/14/2019	736.13	16.32	4.64	731.49	11.68
MW26-12	10/14/2019	750.64	13.02	8.64	742.00	4.38
MW26-13	10/14/2019	753.90	12.30	11.33	742.57	0.97
MW26-14	10/14/2019	753.02	14.04	12.06	740.96	1.98
MW26-15	10/14/2019	738.50	9.80	7.3	731.20	2.50
MW26-16	10/14/2019	736.50	9.45	6.84	729.66	2.61
MW26-17	10/14/2019	736.92	8.78	6.37	730.55	2.41
MW26-18	10/14/2019	740.61	13.81	8.04	732.57	5.77
MW26-20	10/14/2019	721.64	12.83	1.45	720.19	11.38

Footnotes:

1) Well MW25-3 was not gauged because of a hornets nest in the metal well casing

2) Well MW25-10 was dry during the gauging event.

3) Vertical datum is NAVD88

Army's Response to Comments from the United States Environmental Protection Agency

Subject: PFAS ESI Phase 2 draft Tech Memo (Fire House and SEADs 25 and 26)

Seneca Army Depot

Romulus, New York

Comments Dated: 11 February 2020

Date of Comment Response: 08 April 2020

Backcheck/Additional Comments Dated: 14 April 2020

Army Response Dated: 29 April 2020

EPA FIRE HOUSE COMMENTS

Fire House Comment 1: Currently, installation of a downgradient bedrock well pair is planned if PFAS are found in bedrock within the source area. It is recommended that the proposed bedrock well pair downgradient of the Fire House also be installed if PFAS are found in bedrock within SEAD 25. This installation would further characterize potential PFAS transport pathways to SEAD 25.

> **Army Response to Fire House Comment 1:** Concur. A downgradient bedrock well pair will be installed if PFAS are impacting the bedrock at SEAD 25 or at the Fire House. A proposed location was added to the revised memo and an approximate location for the well shown in Figure 3.

EPA SEAD 25 COMMENTS

SEAD 25 Comment 1: Another bedrock well pair to the northeast of 25-2 is recommended for the delineation of groundwater flow patterns and potential PFAS transport paths in the area which experiences anomalous overburden radial flow conditions and the highest observed PFAS concentrations.

Army Response to SEAD 25 Comment 1: The Army revised the memo to recommend installing another well pair to the northeast of MW25-2, identified as MWFH-10/D on Figure 3.

EPA Response to Army Comment 1: The new SEAD 25 and Fire House proposed locations are good, however our first SEAD comment could still be addressed. While the newly-suggested MWFH-10/D is a good well location for delineating PFAS transport to SEAD 25, a bedrock well pair just northeast of the high-concentration area in SEAD 25 is still recommended (approximately located along the line between current wells MW25-25 and MW25-18). The combined effect of MWFH-10/D and the proposed well in this area would be to shed light upon both contaminant transport into SEAD 25 as well as the movement of contaminants within SEAD 25 bedrock, particularly within areas which may exhibit anomalous flow conditions.

Army Response to EPA: At this time, the Army believes there are enough existing and proposed wells to satisfy the goals of the ESI in this area. The addition of the paired wells at the source (MW25-31/D), upgradient between the Fire House and SEAD 25 (MWFH-10/D), and the pair downgradient of SEAD 25 (MW25-22/D) will provide sufficient information on the contaminant transport within the shallow and deep water-bearing zones both up- and down-gradient of the source area and beneath it for this phase of the investigation. Additional wells can be considered in the future based on the results of the next round of sampling.

SEAD 25 Comment 2: The February 2019 Response to Comments states that additional wells will be installed to further delineate the extent of PFAS contamination in the area of MW25-24 and MW25-23 if PFAS were detected in these wells during the first round of sampling. Given that PFAS were detected here in the most recent sampling events, we recommend following through on this action, particularly in the vicinity of MW25-24.

Army Response to SEAD 25 Comment 2: These wells, and all existing wells, will be sampled again to collect a second data point at all locations. An additional well will be installed to the northeast of MW25-24 (new well identified as MW25-33) to delineate the toe of the PFAS impacts in that direction. Given the low concentration of PFAS at MW25-23, an additional well to further delineate PFAS extent is not required.

SEAD 25 Comment 3: It is unclear whether the wells farthest downgradient in SEAD25 (e.g. MW25-28, MW25-29) are being utilized to determine groundwater flow conditions. Please clarify and provide a compilation of groundwater elevation measurements.

Army Response to SEAD 25 Comment 3: These wells are included in the groundwater contour interpolation. A table with groundwater elevations is attached to these responses. Table 4 shows monitoring well construction details and Table 5 presents groundwater elevation data.

EPA SEAD 26 COMMENTS

SEAD 26 Comment 1: It is unclear how the 2017 temporary monitoring well installation and sampling details compare to the more recently-installed permanent wells. Is there an existing compilation of the as-constructed well depths for the wells and temporary wells across the area? If possible, please provide this information for the Fire House and SEAD 25 wells also.

Army Response to SEAD 26 Comment 1: The temporary wells installed at SEAD-26 during the SI were installed with by direct push and are 1-inch PVC wells with 9-10 ft, 0.010 inch slotted screens.

The bottom of screen was installed at the refusal depth. The screened interval was surrounded with a #0 sand pack and a bentonite seal extends to the surface. The wells are stick-up with no surface completion.

SEAD 26 Comment 2: Table - Additional data gap: Temporal variability in PFAS concentrations in source-proximal locations. Additional sampling rounds will occur for the new permanent wells, but it does not appear that PFAS concentrations will be further investigated via additional sampling in the source-proximal areas where temporary wells were installed and PFAS were detected above the proposed current and projected regulatory criteria (i.e. in a number of the areas sampled by the TMW's).

Army Response to SEAD 26 Comment 2: With the exception of TWM26-1 and TMW26-5, permanent groundwater monitoring wells will be installed at the location of temporary well points so that a second round of data may be collected. The concentrations near TMW26-1 and TMW26-5 were low in contaminant concentration (max PFOS concentration of 4.9 J ng/L) and are side-gradient of the PFAS source. Additionally, this area is addressed by MW26-13 and MW26-18.

SEAD 26 Comment 3: It is unclear how "shallow" and "deep" are defined with respect to bedrock well installation, and whether this definition is identical across areas being considered in this investigation. Please clarify.

Army Response to SEAD 26 Comment 3: Shallow wells will target the upper till/weathered bedrock water bearing zone and will be installed to a total depth approximately 3 to 5 feet into competent rock to ensure adequate water volume for sampling. Please note that many of these wells are seasonably dry. The well screen will be 10 feet in length and will typically extend across the till and weathered bedrock interval. Deep wells will be drilled into competent rock and will have a 10-foot screen. The top of the deep well screen will be set approximately 30 feet below the top of competent rock. This depth is proposed such that the screen is set deep enough to be outside the influence of the surficial / bedrock water bearing zone interface and to avoid the potential for drawing down surface water. As the borehole is advanced through the competent bedrock, the geologist onsite will coordinate with the driller to identify any weak drilling zones and will examine the drill core for any natural fracture zones. These fracture zones may act as preferential transport pathways and the well screen depth may be adjusted to target these zones. Lastly the depth of these wells will be based on field conditions and may be deeper if the bedrock aquifer does not have sufficient yield to obtain a water sample.

SEAD 26 Comment 4: Please confirm that groundwater elevation measurements will be taken during all of the upcoming sampling events in order to further refine understanding of groundwater flow patterns.

Army Response to SEAD 26 Comment 4: A full round of groundwater elevation measurements will be collected during every sampling event.

SEAD 26 Comment 5: Based on the results of the 2017 temporary well sampling and in anticipation of the lowering of the NY PFAS regulatory standard, a new well is recommended in order to delineate the southern edge of the plume just downgradient of the suspected source areas in SEAD 26.

Army Response to SEAD 26 Comment 5: Concur. The Army proposes installing three more wells downgradient of MW26-20 to define the plume toe (MW26-23, MW26-24/D, and MW26-25). See

bullet two in the recommendations table for SEAD 26. Approximate locations of these three wells are shown in the revised memo with figure. The locations may shift dependent on the results of the two additional wells north and south of MW26-20.

EPA Response to Army 5: Depending on the results of the newly-installed source area wells, it may still be prudent to install an additional monitoring well just downgradient of the southern end of the source area (where it appears there is a southerly component to groundwater flow at least some of the time). (Related to our final SEAD 26 comment)

Side Note: It's worth taking note that some wells (MW26-20, MW26-13, and MW26-18) have low levels of PFOA and PFOS (<25 ppt), but hundreds of ppt of other PFAS such as PFHxA and PFPA. It may indicate subsurface transformation of PFAS contaminants as they travel through the aquifer, or it could indicate that some PFAS contaminants travel more readily than others.

Army Response to EPA: An additional well south of SEAD 26 will be considered after the data collected from the replacement permanent wells within SEAD 26 is reviewed. Additional analysis of other PFAS contaminants will be provided using radar charts. Radar charts will be prepared to illustrate concentrations and proportions of various PFAS compounds in groundwater and surface water at select sample locations. The proportional analysis provided by radar charts can be used to identify distinct combinations of PFAS mixtures at each sample location. As stated in the comment, concentrations and proportions of PFAS in groundwater can change as migration occurs away from a source area through a porous medium due to differential sorption. For instance, PFOS (8-carbon sulfonate) is more sorptive than PFHxS (6-carbon sulfonate), which is more sorptive than PFBS (4-carbon sulfonate), resulting in fractionation, or changing proportions of concentrations along the flow direction.

Additional EPA Comments

Additional Comment 1: Rationale should be provided for the selection of a 6"-36" soil sampling interval

Army Response to Additional Comment 1: This interval was included in the guidance provided by NYSDEC. Due to the amount of time that has past since the suspected release, the deeper extents of this range will be targeted during the investigation.

Additional Comment 2: Within areas in which substantial heterogeneity is expected in the subsurface soils (e.g. in areas containing fill material overlying till within the vertical interval to be sampled), it is recommended that soil samples are split in order to capture potential differences in contaminant partitioning between the materials. This is particularly relevant where some portion of the material to be sampled is fill, given that the temporal relationship between the emplacement of fill and the timing of contaminant release is unclear.

Army Response to Additional Comment 2: Historical boring logs and test pit records from the SEAD 25/26 RI will be examined before the field team mobilizes. The field team will be briefed on where to anticipate fill and its description. If fill is encountered, a sample will be collected from the fill and from the underlying till when feasible.

END OF COMMENTS

Army's Response to Comments from the New York Department of Environmental Conservation (NYSDEC)

Subject: PFAS ESI Phase 2 draft Tech Memo (Fire House and SEADs 25 and 26)

Seneca Army Depot

Romulus, New York

Comments Dated: 20 March 2020

Date of *Draft* Comment Response: 08 April 2020

GENERAL COMMENTS (Fire House, SEAD 25, and SEAD 26)

Comment 1: Please provide a Figure that depicts the locations of all proposed groundwater monitoring wells.

> **Army Response to Fire House Comment 1:** Concur. Figures 3 and 4 depict proposed sampling locations.

Comment 2: Based on the known locations of surface water features (e.g., drainage culverts) and surface water flow direction, please identify the location(s) of where surface water is ultimately discharged. If these areas are identified, it is recommended that additional paired shallow/deep monitoring wells be positioned in these downgradient discharge location(s). As stated in previous NYSDOH correspondence, based on the proposed redevelopment plans (farming, homesteads) in areas west of the referenced sites, it is recommended that additional downgradient monitoring wells in these areas be included as part of defining the nature and extent of any site-related PFAS contamination.

> **Army Response to Comment 2:** Surface water discharge zones were noted on Figures 3 and 4. Additional paired shallow and bedrock wells (MW25-34/D and MW26-24/D) were added at these downgradient locations.

Comment 3: While not specifically addressed in this document, please provide an update on what (if any) off-site farming/homesteads have been developed in near proximities to the referenced sites.

> **Army Response to Comment 3:** The nearest section of land that may be used as a future building site is noted on the Figure 4 (west of SEAD 26 along Fayette Road). The surrounding land west of the Fire House, SEAD 25 and SEAD 26 and east of Fayette Road are not expected to be used for farming/homesteading.

FIRE HOUSE COMMENTS

Fire House Comment 4: The recommendations provided in the memo are acceptable. Please provide clarification on the locations of the three new wells upgradient of MWFH-04 and MWFH-05, surface

water sample locations, depths to install the deep/shallow bedrock well pairs, and the timeline for the second round of groundwater sampling.

Army Response to Fire House Comment 4: The three new wells upgradient of the Fire House and proposed surface water locations are included in the revised memo and shown in Figure 3. There are no natural surface water features within the area of the former Fire House; however, three surface water samples (SWFH-01, SWFH-02 and SWFH-03) are proposed for the storm drainage system. The locations of the samples will be dependent on accessibility (e.g., a culvert or manhole). Shallow wells will target the upper till/weathered bedrock water bearing zone and will be installed to a total depth approximately 3 to 5 feet into competent rock to ensure adequate water volume for sampling. For all practical purposes this depth is where water is first encountered but this location is not potable as this water bearing zone will not yield sufficient volume for irrigation or drinking water purposes.

The well screen will be 10 feet in length and will typically extend across the till and weathered bedrock interval. Deep wells will be drilled into competent rock and will have a 10-foot screen. The top of the deep well screen will be set approximately 30 feet below the top of competent rock. This depth is proposed such that the screen is set deep enough to be outside the influence of the surficial water bearing zone/bedrock aquifer interface and to avoid the potential for drawing down surface water. As the borehole is advanced through the competent bedrock, the geologist onsite will coordinate with the driller to identify any weak drilling zones and will examine the drill core for any natural fracture zones. These fracture zones may act as preferential transport pathways and the well screen depth may be adjusted to target these zones. Lastly the exact depth of these wells will be based on field conditions and may be deeper if the bedrock aquifer does not have sufficient yield to obtain a water sample.

Fire House Comment 5: Additionally, overburden soil samples should be collected in locations in proximity to MWFH-4 and MWFH-5 at a depth between 6 and 36 inches. The lab should be directed to hold a portion of the soil samples for SPLP and leachate PFAS analysis if the initial soil results are found to be greater than 70 ppt for PFOA or PFOS.

The Seneca Army Depot UFP-QAPP does not address soil collection, sampling, and analysis procedures for PFAS. The DEC has developed guidance for PFAS sampling and analysis and has provided it as an enclosure for your reference.

Army Response to Fire House Comment 5: Three proposed soil locations (SBFH-01, SBFH-02 and SBFH-03) were added to the revised memo and Figure 3. The three samples will be collected between 6 and 36 inches bgs and standard PFAS precautions and NYSDEC guidance will be followed. The samples will be analyzed for the same PFAS suite as groundwater and a portion of the sample will be submitted for SPLP analysis. The results from the leachate will be evaluated and discussed following the sampling event.

Fire House Comment 6: The DEC recommends Total Oxidizable Precursor (TOP) Assay be conducted on one sample collected from the source area monitoring well.

Army Response to Fire House Comment 6: The Army disagrees with the value of TOP assay at this stage in the investigation. The TOP Assay is a harsh, oxidizing procedure performed by the lab and differs from expected long-term natural conditions at the site. The result is typically predictable: more perfluorinated degradation products after the procedure than before and it is not representative of

what has or will occur under natural conditions. Such precursor compounds are often useful to explain a detection of PFOS/PFOA where no source is known; however, the source of PFAS at SEDA is expected to be related to AFFF use or storage and occurred decades ago and has experienced oxidation over time. The TOP Assay is recommended for very limited use during an RI or if a PFAS detection cannot be adequately explained by the know pathways or historical sources.

This request was reviewed and vetted with the US Army Corps of Engineers New York/Huntsville Districts, HTRW Center of Expertise and our BRAC (G9) customer. All parties agree not to collect TOP assay sampling at this phase of the project,

SEAD 25 COMMENTS

SEAD 25 Comment 7: The data gaps section indicates incorrectly that the promulgated standard will change to a sum of 10 ng/L [for PFOA and PFOS]. The standard under consideration by the NYSDOH is a concentration of PFOA and PFOS each at 10 ng/L. Please revise this statement to accurately portray the proposed MCL for each individual compound, only.

Army Response to SEAD 25 Comment 7: Concur. The statement was revised to indicate that the promulgated standard may change to detections of PFOA or PFOS at or above 10 ng/L.

SEAD 25 Comment 8: The recommendations provided in the memo are acceptable. Please provide clarification on the depth of the shallow/deep bedrock well pairs and the timeline for the second round of PFAS groundwater samples from all previous locations.

Army Response to SEAD 25 Comment 8: Shallow wells will target the upper till/weathered bedrock water bearing zone and will be installed to a total depth approximately 3 to 5 feet into competent rock. The well screen will be 10 feet in length and will typically extend across the till and weathered bedrock interval. Deep wells will be drilled into competent rock and will have a 10-foot screen. The top of the deep well screen will be set approximately 30 feet below the top of competent rock. This depth is proposed such that the screen is set deep enough to be outside the influence of the surficial water bearing zone / bedrock aquifer interface and to avoid the potential for drawing down surface water. As the borehole is advanced through the competent bedrock, the geologist onsite will coordinate with the driller to identify any weak drilling zones and will examine the drill core for any natural fracture zones. These fracture zones may act as preferential transport pathways and the well screen depth may be adjusted to target these zones. Lastly the depth of these wells will be based on field conditions and may be deeper if the bedrock aquifer does not have sufficient yield to obtain a water sample.

The second round of PFAS groundwater sampling is targeted for spring 2020.

SEAD 25 Comment 9: The DEC recommends Total Oxidizable Precursor (TOP) Assay be conducted on one sample collected from the source area monitoring well.

Army Response to SEAD 25 Comment 9: See RTC #6.

SEAD 25 Comment 10: Overburden soil samples should be collected in locations in proximity to MW25-2 and MW25-9 at a depth between 6 and 36 inches. The lab should be directed to hold a portion of

the soil samples for SPLP and leachate PFAS analysis if the initial soil results are found to be greater than 70 ppt for PFOA or PFOS.

Army Response to SEAD 25 Comment 10: Three proposed soil locations (SB25-17, SB25-18 and SB25-19) were added to the revised memo and Figure 3. The three samples will be collected between 6 and 36 inches bgs and standard PFAS precautions and NYSDEC guidance will be followed. The samples will be analyzed for the same PFAS suite as groundwater and a portion of the sample will be submitted for SPLP analysis. The results from the leachate will be evaluated and discussed following the sampling event.

EPA SEAD 26 COMMENTS

SEAD 26 Comment 11: The recommendations provided in the memo are acceptable. Please provide clarification on the depth of the shallow/deep bedrock well pairs and the timeline for the second round of PFAS groundwater samples from all previous locations.

Army Response to SEAD 26 Comment 11: Shallow wells will target the upper till/weathered bedrock water bearing zone and will be installed to a total depth approximately 3 to 5 feet into competent rock. The well screen will be 10 feet in length and will typically extend across the till and weathered bedrock interval. Deep wells will be drilled into competent rock and will have a 10-foot screen. The top of the deep well screen will be set approximately 30 feet below the top of competent rock. This depth is proposed such that the screen is set deep enough to be outside the influence of the surficial aquifer / bedrock aquifer interface and to avoid the potential for drawing down surface water. As the borehole is advanced through the competent bedrock, the geologist onsite will coordinate with the driller to identify any weak drilling zones and will examine the drill core for any natural fracture zones. These fracture zones may act as preferential transport pathways and the well screen depth may be adjusted to target these zones. Lastly the depth of these wells will be based on field conditions and may be deeper if the bedrock aquifer does not have sufficient yield to obtain a water sample.

SEAD 26 Comment 12: The SEAD-26 figures do not depict surface water locations – ephemeral or permanent or drainage pathways. Where are surface water samples to be collected from?

Army Response to SEAD 26 Comment 12: Surface water features and flow directions were added to Figure 4. Samples (SW26-01 thru SW26-05) will be collected from drainage pathways and a pond downgradient of SEAD 26.

SEAD 26 Comment 13: Will the shallow/deep bedrock monitoring well placed near the train tracks will be installed near MW26-16?

Army Response to SEAD 26 Comment 13: Concur. A bedrock well (MW26-32D) will be installed adjacent to shallow well MW26-16 as this was the location of elevated concentrations of PFAS.

SEAD 26 Comment 14: If/When a source is located from SEAD-26, soil samples should be collected and analyzed for PFAS and as per above, extracted via SPLA and analyzed for PFAS.

Army Response to SEAD 26 Comment 14: Five soil samples (SB26-13 thru SB26-17) are proposed for SEAD 26. They are located within suspected source areas (e.g., former fire training targets; burn pit; helicopter fuselage; etc.). The samples will be collected between 6 and 36 inches bgs and standard PFAS precautions and NYSDEC guidance will be followed. The samples will be analyzed for the same PFAS suite as groundwater and a portion of the sample will be submitted for SPLP analysis. The results from the leachate will be evaluated and discussed following the sampling event.

SEAD 26 Comment 15: The DEC recommends Total Oxidizable Precursor (TOP) Assay be conducted on one sample collected from the source area monitoring well.

Army Response to SEAD 26 Comment 15: See RTC #6.

END OF COMMENTS

November 2020 ESI Data Summary

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF, G-9
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

03 December 2020

Mr. Bob Morse
USEPA Region II
Superfund Federal Facilities Section
290 Broadway, 18th Floor
New York, NY 10007-1866

Ms. Melissa Sweet
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233-7015

Mr. Mark Sergott
Bureau of Environmental Exposure Investigation
New York State Department of Health
Empire State Plaza Corning Tower, Room 1787
Albany, NY 12237

Dear Mr. Morse, Ms. Sweet, and Mr. Sergott:

Please see the attached PFAS data summary for Seneca Army Depot. This submittal includes data tables and figures for groundwater, surface water, and soil collected at SEAD-25, the Fire House area, and SEAD-26. A formal report presenting analysis of the data will be prepared following the Spring 2021 sampling event. The Spring event will include groundwater sampling at all wells installed at these three areas.

If you have any questions about the attached document, please call me at 347-271-0226.

Sincerely,

Signed on behalf of

James T. Moore, PMP
Base Environmental Coordinator
Corps of Engineers, Project Manager

Figures

751000 751200 751400 751600 751800 752000 752200 752400 752600 752800

1000200 1000000 999800 999600 999400 999200 999000 998800

East Patrol Road

Stormwater flow within infrastructure in the Admin area is towards the south and west. Underground pipes in the Admin area transition to an open drainage ditch near MW25-20. Overland flow is towards the southwest.

MWFH-08	ng/L	
PFOS	ND	
PFOA	0.77	J
Total PFAS	3.37	

MWFH-06	ng/L	
PFOS	ND	
PFOA	0.66	J
Total PFAS	2.26	

MWFH-07	ng/L	
PFOS	ND	
PFOA	0.66	J
Total PFAS	4.51	

MWFH-09	ng/L	
6:2 FTS	250	
PFOS	65	
PFOA	41	
PFPeA	170	
Total PFAS	856	

MWFH-05	ng/L	
6:2 FTS	260	J
PFBA	260	
PFHpA	510	
PFHxS	1,800	
PFHxA	820	
PFOS	440	J+
PFOA	4,100	J+
PFPeA	860	
Total PFAS	9,195	

East Patrol Road

East Patrol Road

MWFH-11	ng/L	
PFOS	ND	
PFOA	ND	
Total PFAS	9.12	

MWFH-04	ng/L	
6:2 FTS	5,600	
8:2 FTS	2,000	J
PFBA	345	
PFHpA	630	
PFHxS	1,200	
PFHxA	950	
PFNA	145	J
PFOS	4,200	J+
PFOA	1,300	
PFPeA	1,200	
Total PFAS	17,668	

MWFH-09D	ng/L	
PFOS	ND	
PFOA	0.52	J
Total PFAS	1.1	

Former Fire House

MWFH-01		
6:2 FTS	160	
PFHxS	300	J
PFHxA	280	J
PFOS	220	
PFOA	210	J
PFPeA	240	
Total PFAS	1,660	

SEAD-36

MWFH-03	ng/L	
PFOS	ND	
PFOA	2.3	
Total PFAS	61	

MWFH-10D	ng/L	
PFOS	6.6	J
PFOA	1.7	
Total PFAS	23.4	

MWFH-02	ng/L	
PFOS	6.85	
PFOA	22.5	
Total PFAS	178	

SEAD-31
SEAD-71

SEAD-39

SEAD-33

SEAD-121E

SEAD-30

SWFH-02	ng/L	
PFOS	6.6	
PFOA	3.8	
Total PFAS	28.4	

SWFH-01	ng/L	
PFOS	9.6	
PFOA	8.4	
Total PFAS	35.0	

SWFH-03	ng/L	
PFOS	18	
PFOA	2.4	
Total PFAS	48.5	

SEAD-121F

Administration Avenue

SEAD-121G

0 100 200 400 600 800 Feet

Sampling Date	Sample ID
May 2019	MWFH-01, MWFH-02
Oct 2019	MWFH-03, -04, and -05
June 2020	MWFH-06, -07, and -08
August 2020	MWFH-09D SWFH-01, -02 and -03
Sept 2020	MWFH-09, -10D, and -11

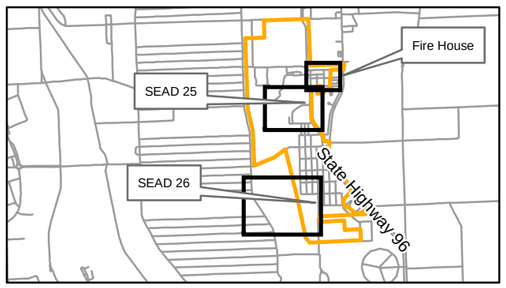
6:2 Fluorotelomer Sulfonate	6:2 FTS
8:2 Fluorotelomer Sulfonate	8:2 FTS
Perfluorobutanoic acid (PFBA)	PFBA
Perfluoroheptanoic acid (PFHpA)	PFHpA
Perfluorohexanesulfonic acid (PFHxS)	PFHxS
Perfluorohexanoic acid (PFHxA)	PFHxA
Perfluorononanoic acid (PFNA)	PFNA
Perfluorooctanesulfonic acid (PFOS)	PFOS
Perfluorooctanoic acid (PFOA)	PFOA
Perfluoropentanoic acid (PFPeA)	PFPeA

Legend

Samples (Red symbol if exceedance)

- Till / Weathered Bedrock MW
- Shallow Bedrock MW
- Stormwater Sample
- SEAD Boundary
- Stormwater Drainage
- Approximate PID Area Boundary where GW use is prohibited
- Former Fire House
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:
1) Concentrations shown as ng/L.
2) PFOA or PFOS red if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the west and southwest.
ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated
J+ = Estimated, possibly biased high



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

N

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 1 - FIRE HOUSE - PFAS GROUNDWATER AND SURFACE WATER RESULTS

1 inch = 150 feet | November 2020

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R3b\Maps\PFAS_FH_GWR3Results_110220.mxd

748000 749000 750000 751000 752000

1000000 999000 998000 997000

East Patrol Road

SEAD-16

SEAD-17

MW25-21	ng/L	
PFHxS	310	J
PFHxA	250	J
PFOS	140	J
PFOA	720	J
PFPeA	110	J
Total PFAS	1,680	

MW25-30	ng/L
PFOS	ND
PFOA	ND
Total PFAS	4.7

MW25-20	ng/L
PFOS	ND
PFOA	8.15
Total PFAS	39.4

MW25-25	ng/L	
PFOS	ND	
PFOA	0.79	J
Total PFAS	9.5	

MW25-33	ng/L
PFOS	ND
PFOA	61
Total PFAS	75.1

SW25-02	2019	2020
PFHxS	130	26
PFOS	58	62
PFOA	115	27
Total PFAS	477	183

SW25-01	2019	2020
PFOS	78	16
PFOA	26	7.2
Total PFAS	334	61

MW25-24	ng/L
PFOS	11
PFOA	3.7
Total PFAS	53

Detail shown in Figure 2B

MW25-29	ng/L	
PFOS	ND	
PFOA	0.53	J
Total PFAS	0.90	

SW25-04	ng/L
PFOS	27
PFOA	20
Total PFAS	122

MW25-28	ng/L
PFOS	8.1
PFOA	11
Total PFAS	67.2

SW25-05	ng/L
PFBS	640
PFOS	51
PFOA	22
Total PFAS	792

MW25-23	ng/L
PFOS	ND
PFOA	3.35
Total PFAS	16

Sample not collected due to lack of water

MW25-22	ng/L	
PFHxS	510	J
PFHxA	280	J
PFOS	16	J
PFOA	1,000	J+
Total PFAS	2,023	

MW25-27	ng/L	
PFOS	ND	
PFOA	0.94	J
Total PFAS	24.2	

MW25-26	ng/L
PFOS	ND
PFOA	ND
Total PFAS	-

MW25-32	ng/L
PFOS	ND
PFOA	ND
Total PFAS	10.4

MW25-22D	ng/L
PFOS	ND
PFOA	6.8
Total PFAS	8.8

Ordnance Road

1st Street

Administration Avenue

Patrol Road

SW25-06	ng/L
PFOS	34
PFOA	29
Total PFAS	161

MW25-34	ng/L	
PFOS	ND	
PFOA	0.96	J
Total PFAS	0.96	

MW25-34D	ng/L	
PFOS	ND	
PFOA	1.1	J
Total PFAS	21.1	

0 250 500 1,000 1,500 2,000 Feet

Sampling Date	Sample ID
May 2019	MW25-20, -21, -22, -23, -24 and -25
June 2019	25SW-01 and 25SW-02
October 2019	MW25-26, -27, -28, -29, and -30
August 2020	MW25-22D,-32, -33,-34 and -34D 25SW-01, -02, -04, -05 and -06

Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorononanoic acid	PFNA
Perfluorooctanesulfonamide	PFOSA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
Perfluoropentanoic acid	PFPeA

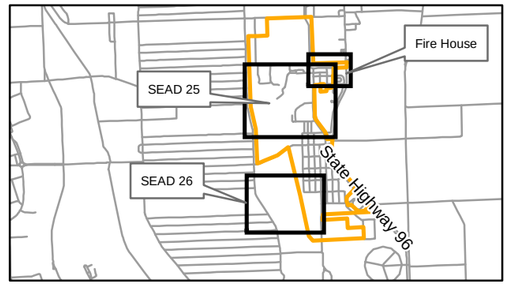
Legend

Samples (Red symbol if exceedance)

- Till / Weathered Bedrock
- Shallow Bedrock
- Stormwater (Fire House only) / Surface Water
- SEAD Boundary
- Stormwater Drainage
- Approximate PID Area Boundary where GW use is prohibited
- FireHouse
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS red if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the southwest.
5) If more than one sample was collected at a location, the year of collection is shown. All other locations were sampled once.
ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 2A - SEAD 25 - PFAS GROUNDWATER AND SURFACE WATER RESULTS

1 inch = 400 feet | November 2020

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R3b\Maps\PFAS_SEAD25_GWR3Results_110220.mxd

750800 751000 751200

998200 998000

MW25-06	ng/L
PFOS	6
PFOA	140
Total PFAS	284

MW25-17	ng/L
PFBS	500
PFHpA	470
PFHxS	19,000
PFHxA	1,200
PFOS	2,600
PFOA	11,000
Total PFAS	34,807

MW25-19	ng/L
PFBS	840
PFHpA	400
PFHxS	13,000
PFHxA	2,900
PFOS	2,100
PFOA	10,000
Total PFAS	29,293

MW25-03	ng/L	
PFBS	240	
PFHpA	220	
PFHxS	5,200	J
PFHxA	1,100	
PFOS	2,300	J
PFOA	7,500	J
Total PFAS	16,634	

MW25-18	ng/L
PFHxS	920
PFHxA	120
PFOS	20
PFOA	550
Total PFAS	1,705

MW25-08	ng/L	
PFBS	1,600	
PFHpA	830	
PFHxS	36,000	J
PFHxA	5,900	
PFNA	140	
PFOS	8,300	
PFOA	17,000	
Total PFAS	69,800	

MW25-02	ng/L	
PFBS	1500	
PFHpA	3200	
PFHxS	17,000	
PFHxA	14,000	
PFOS	3,900	
PFOA	89,000	J
Total PFAS	128,757	

Administration Avenue

MW25-01	ng/L
PFBS	380
PFHpA	350
PFHxS	5,100
PFHxA	1,900
PFOS	490
PFOA	10,000
Total PFAS	18,237

MW25-15	ng/L
PFBS	350
PFHpA	255
PFHxS	3,350
PFHxA	890
PFOS	485
PFOA	6,850
Total PFAS	12,220

MW25-09	ng/L
PFBS	670
PFHpA	380
PFHxS	8,900
PFHxA	1,600
PFOS	1,400
PFOA	18,000
Total PFAS	31,007

MW25-31	ng/L	
PFBS	180	
PFBA	660	
PFHpA	1,100	
PFHxS	1,900	
PFHxA	6,100	
PFOS	420	
PFOA	65,000	J+
PFPeA	2,200	
Total PFAS	77,636	

MW25-31D (ng/L)	UP	DN
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	-	3.5

MW25-10	ng/L
PFBS	205
PFHpA	100
PFHxS	2,150
PFHxA	685
PFOS	245
PFOA	2,050
Total PFAS	5,446

Ordnance Road

MW25-13	ng/L	
PFOS	1.4	J
PFOA	70	
Total PFAS	120	

Sampling Date	Sample ID
April 2017	MW25-1, -2, -3, -6, -8, -9, -10, -13, -15, -17, -18 and -19
August 2020	MW25-31 and -31D

0 25 50 100 150 200 Feet

With the exception of MW25-31 and 31D, all samples were collected during the 2018 Site Investigation. Samples were analyzed for 14 PFAS compounds. During the ESI, samples were analyzed for 21 PFAS compounds.

Perfluorobutanesulfonic acid	PFBS
Perfluorobutanoic acid	PFBA
Perfluorodecanesulfonic acid	PFDS
Perfluorodecanoic acid	PFDA
Perfluorododecanoic acid	PFDoA
Perfluoroheptanesulfonic Acid	PFHpS
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorononanoic acid	PFNA
Perfluorooctanesulfonamide	PFOSA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
Perfluoropentanoic acid	PFPeA

Legend

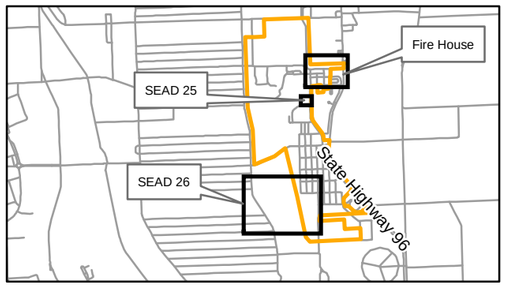
Sample (Red symbol if exceedance)

- Till / Weathered Bedrock Well
- Shallow Bedrock Well
- RA Excavation Extents
- SEAD Boundary
- Stormwater Drainage
- Approximate PID Area Boundary where GW use is prohibited
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS red if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is radial near the RA excavation area transitioning towards the southwest.

ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated
J+ = Estimated, possibly biased high



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

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SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 2B - SEAD 25 DETAIL - PFAS GROUNDWATER AND SURFACE WATER RESULTS

1 inch = 50 feet | November 2020

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R3b\Maps\PFAS_SEAD25_PadArea_GWR3Results_110620.mxd

748000 749000 750000 751000

993000 992000 991000

SW26-06	ng/L	
PFOS	5.8	
PFOA	2.7	
Total PFAS	43.7	

SW26-03	ng/L	
PFOS	3.3	J
PFOA	0.93	J
Total PFAS	9.80	

MW26-25	ng/L	
PFOS	ND	
PFOA	ND	
Total PFAS	1.58	

SW26-05	ng/L	
PFOS	4.8	
PFOA	3.2	
Total PFAS	44.2	

MW26-21	ng/L	
PFOS	ND	
PFOA	ND	
Total PFAS	6.81	

SW26-04	ng/L	
PFOS	3.65	J
PFOA	2.35	
Total PFAS	29.7	

MW26-18	ng/L	
PFOS	11	
PFOA	18	
PFPeA	130	
Total PFAS	346	

MW26-20	ng/L	
PFBA	160	
PFHxS	120	
PFHxA	245	
PFOS	9.75	J
PFOA	24.5	
PFPeA	345	
Total PFAS	1,004	

MW26-16	ng/L	
PFBA	215	
PFHpA	350	J
PFHxS	610	J
PFHxA	655	J
PFOS	785	J
PFOA	330	J+
PFPeA	720	J
Total PFAS	3,795	

MW26-24	ng/L
PFOS	ND
PFOA	ND
Total PFAS	-

MW26-23	ng/L
PFOS	ND
PFOA	11
PFPeA	110
Total PFAS	317

MW26-32D (ng/L)	UP	DN
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	-	-

MW26-23D	ng/L
PFOS	ND
PFOA	ND
Total PFAS	7.90

MW26-22	ng/L
PFOS	ND
PFOA	ND
Total PFAS	-

MW26-17	ng/L
PFOS	ND
PFOA	3.7
PFPeA	130
Total PFAS	265

SEAD-121I

SEAD-26

SEAD-64A

Sample not collected due to lack of water

Sample not collected due to lack of water

Sampling Date	Sample ID
May 2019	MW26-12, -13, -14, -15, -16 and -17
Oct 2019	MW26-18 and MW26-20
June 2020	MW26-21 and MW26-22
August 2020	MW26-19, -23, -23D, -24, -25, -26, -27, -28, -28D, -29, -30, -31 and -32D SW26-03, -04, -5 and -06

Perfluorobutanoic acid	PFBA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
Perfluoropentanoic acid	PFPeA

0 200 400 800 1,200 1,600 Feet

Legend

Monitoring Wells (Red symbol if exceedance)

- Till / Weathered Bedrock
- Shallow Bedrock

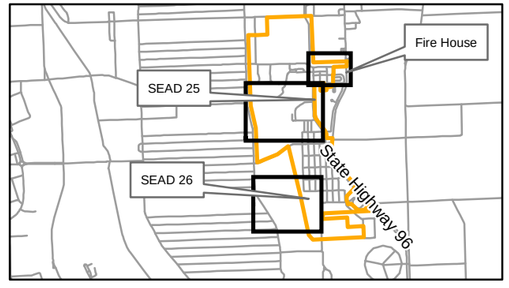
Temporary Monitoring Wells (Abandoned) (Red symbol if exceedance during SI)

- Till / Weathered Bedrock
- Surface Water Sample (Red symbol if exceedance)
- Former SEAD 26 Features
- SEAD Boundary
- Drainage Feature
- Low-lying areas
- Road
- Approximate PID Area Boundary where GW use is prohibited
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS **red** if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the west.

ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated; J+ = Estimated, possibly biased high



DATA SOURCES
-NYS Regulatory Freshwater Wetlands: CUGIR, 2020
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 3A - SEAD 26 - PFAS GROUNDWATER AND SURFACE WATER RESULTS

1 inch = 300 feet	November 2020

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ES\ESI_R3b\Maps\PFAS_SEAD26_GWR3Results_110420.mxd

750000 750500 751000 751500

993000 992500 992000 991500

SEAD-121

SW26-03	ng/L	
PFOS	3.3	J
PFOA	0.93	J
Total PFAS	9.80	

Dumpster

Fire Tower

Trailer

MW26-18	ng/L
PFOS	11
PFOA	18
PFPeA	130
Total PFAS	346

MW26-26	ng/L	
PFOS	ND	
PFOA	1	J
Total PFAS	113.6	

MW26-15	ng/L	
PFOS	ND	
PFOA	0.54	J
Total PFAS	0.54	

Drums

MW26-13	ng/L
PFOS	ND
PFOA	7.9
PFPeA	120
Total PFAS	301.7

MW26-12	ng/L	
PFOS	ND	
PFOA	0.52	J
PFPeA	0.64	J
Total PFAS	1.6	

MW26-28	ng/L
6:2 FTS	410
8:2 FTS	585
PFBA	260
PFHpA	570
PFHxS	905
PFHxA	865
PFOS	2,300
PFOA	535
PFPeA	910
Total PFAS	7,498

SEAD-64A

SEAD-26

MW26-16	ng/L	
PFBA	215	
PFHpA	350	J
PFHxS	610	J
PFHxA	655	J
PFOS	785	J
PFOA	330	J+
PFPeA	720	J
Total PFAS	3,795	

Former Bentonite Lined Pit

MW26-27	ng/L	
PFOS	1.7	J
PFOA	2.7	
Total PFAS	133	

Storage Area

Autos

MW26-32D (ng/L)	UP	DN
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	-	-

Sample not collected due to lack of water

MW26-28D (ng/L)	UP	DN
PFOS	ND	ND
PFOA	ND	ND
Total PFAS	1.1	1.3

MW26-14	ng/L
PFOS	6.2
PFOA	4.5
Total PFAS	95.2

Helicopter Fuselage

MW26-29	ng/L
PFOS	ND
PFOA	8.2
PFPeA	56
Total PFAS	158

MW26-17	ng/L
PFOS	ND
PFOA	3.7
PFPeA	130
Total PFAS	265

MW26-30	ng/L
PFHxS	190
PFHxA	190
PFOS	9.7
PFOA	37
PFPeA	160
Total PFAS	757

Former Drum Storage Area

Sample not collected due to lack of water

MW26-31	ng/L
PFHxA	120
PFOS	7.3
PFOA	41
PFPeA	120
Total PFAS	463

MW26-19	ng/L
PFOS	ND
PFOA	4.5
Total PFAS	26.2

0 100 200 400 600 800 Feet

Sampling Date	Sample ID
May 2019	MW26-12, -13, -14,-15, -16 and -17
October 2019	MW26-18
Aug/Sept 2020	MW26-19, -26, -27, -28, -28D, -29, -30, -31 and -32D

6:2 Fluorotelomer Sulfonate	6:2 FTS
8:2 Fluorotelomer Sulfonate	8:2 FTS
Perfluorobutanoic acid	PFBA
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
Perfluoropentanoic acid	PFPeA

Legend

Monitoring Wells (Red symbol if exceedance)

- Till / Weathered Bedrock
- Shallow Bedrock

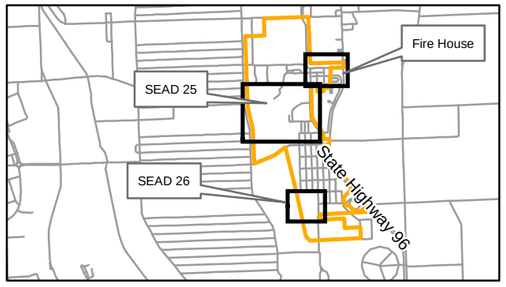
Temporary Monitoring Wells (Abandoned) (Red symbol if exceedance during SI)

- Till / Weathered Bedrock
- Surface Water Sample (Red symbol if exceedance)
- RA Excavation Extents
- Former SEAD 26 Features
- SEAD Boundary
- Drainage Feature
- Approximate PID Area Boundary where GW use is prohibited
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS **red** if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the west.

ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated; J+ = Estimated, possibly biased high



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

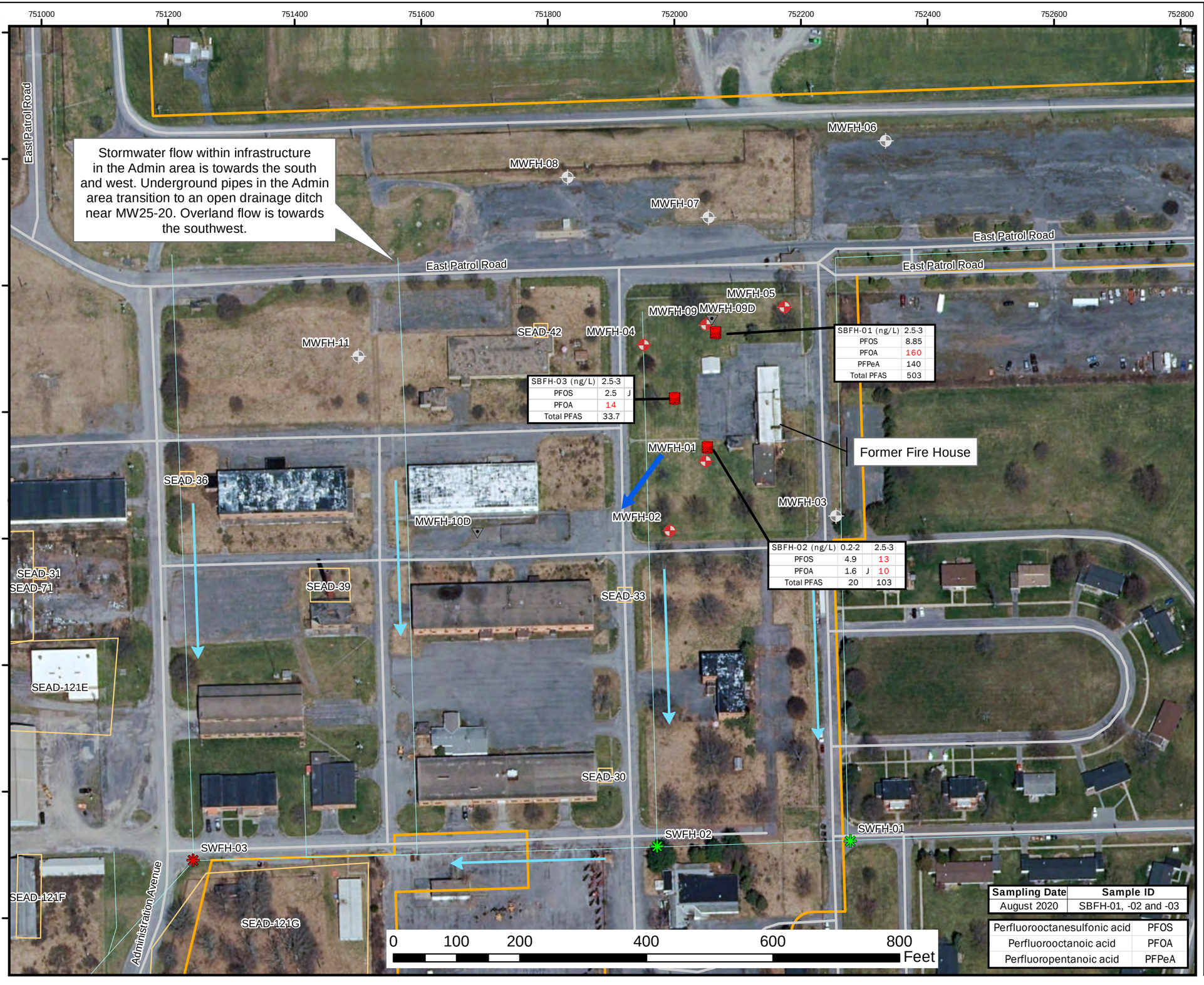
SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 3B - SEAD 26 DETAIL - PFAS GROUNDWATER AND SURFACE WATER RESULTS

1 inch = 165 feet | November 2020

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R3b\Maps\PFAS_SEAD26_PadArea_GWR3Results_110420.mxd



Legend

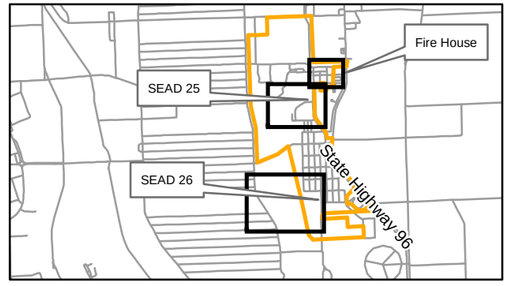
Samples (Red symbol if exceedance)

- Till / Weathered Bedrock MW
- Shallow Bedrock MW
- Stormwater Sample
- Soil Sample (depth in ft bgs)
- SEAD Boundary
- Stormwater Drainage
- Approximate PID Area Boundary where GW use is prohibited
- Former Fire House
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS red if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the west and southwest.
5) Soil samples were analyzed by SPLP 1312/3535 extraction.

ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated; J+ = Estimated, possibly biased high



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

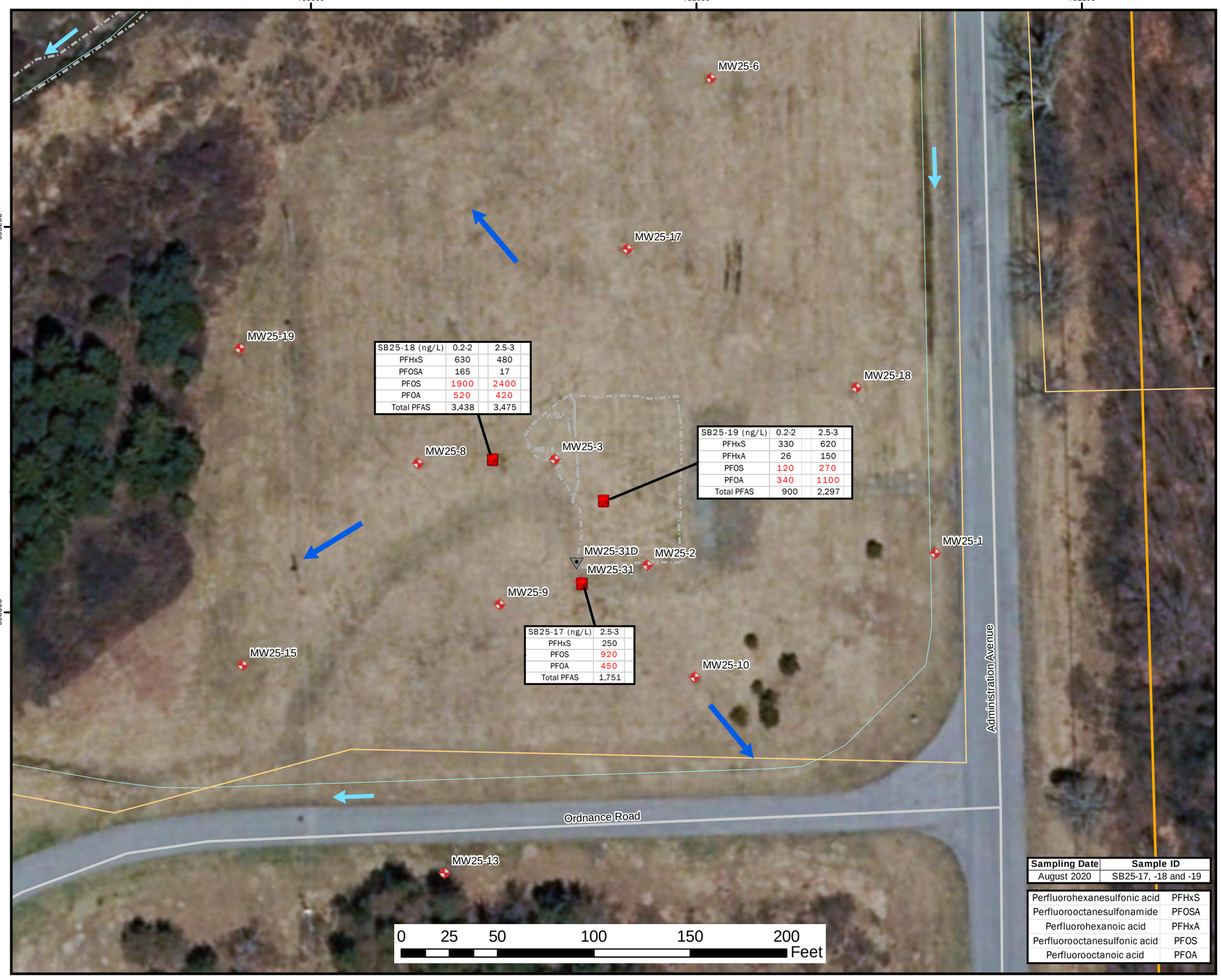
SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 4 - FIRE HOUSE
PFAS SOIL SPLP LEACHATE RESULTS

1 inch = 150 feet	November 2020

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R3b\Maps\PFAS_FH_SOILR3Results_110920.mxd



Sampling Date	Sample ID
August 2020	SB25-17, -18 and -19

Perfluorohexanesulfonic acid	PFHxS
Perfluorooctanesulfonamide	PFOSA
Perfluorohexanoic acid	PFHxA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA

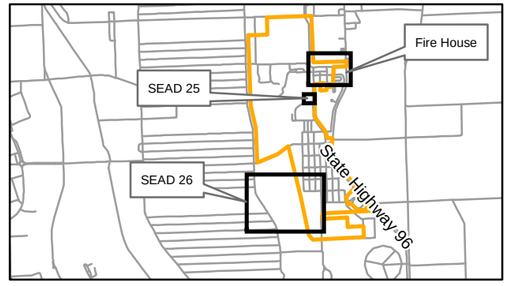
Legend

Samples (Red symbol if exceedance)

- Shallow Bedrock
- Till / Weathered Bedrock
- Soil Sample (depth in ft bgs)
- RA Excavation Extents
- SEAD Boundary
- Stormwater Drainage
- Approximate PID Area Boundary where GW use is prohibited
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS red if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is radial away from the former pad and to the southwest.
5) Soil samples were analyzed by SPLP 1312/3535 extraction.
ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated; J+ = Estimated, possibly biased high



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 5 - SEAD 25
PFAS SOIL SPLP LEACHATE RESULTS

1 inch = 50 feet	November 2020

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R3b\Maps\PFAS_SEAD25_PadArea_SOILR3Results_110920.mxd

750000 750500 751000 751500

993000 992500 992000 991500

SEAD-121

Dumpster

Fire Tower

Trailer

Drums

Armored Automobiles

SEAD-64A

SEAD-26

Former Bentonite Lined Pit

Autos

Helicopter Fuselage

Storage Area

Former Drum Storage Area

Sample not collected due to lack of water

Sample not collected due to lack of water

SB26-13 (ng/L)	2.5-3	
PFOS	2.2	J
PFOA	0.8	J
Total PFAS	78	

SB26-14 (ng/L)	0.2-2		2.5-3	
6:2 FTS	270	J+	290	
8:2 FTS	330	J+	ND	
PFHpA	210		91	
PFHxS	290		280	
PFHxA	170		150	
PFOS	1500		250	
PFOA	200		280	
PFPeA	150		140	
Total PFAS	3,308		1,567	

SB26-15 (ng/L)	2.5-3
PFOS	470
PFOA	39
Total PFAS	711

SB26-16 (ng/L)	0.2-2	2.5-3	
PFOS	15	1.9	J
PFOA	29	18	
Total PFAS	251	108	

SB26-17 (ng/L)	2.5-3
PFOS	36
PFOA	16
Total PFAS	169

0 100 200 400 600 800 Feet

Legend

Samples (Red symbol if exceedance)

- Till / Weathered Bedrock
- Shallow Bedrock

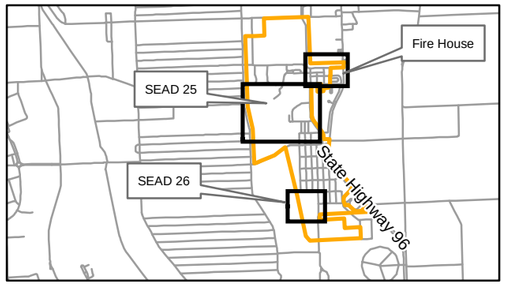
Temporary Monitoring Wells (Abandoned) (Red symbol if exceedance)

- Till / Weathered Bedrock
- Surface Water Sample (Red symbol if exceedance)
- Soil Sample (depth in ft bgs)
- RA Excavation Extents
- Former SEAD 26 Features
- SEAD Boundary
- Drainage Feature
- Approximate PID Area Boundary where GW use is prohibited
- Road
- Groundwater Flow Direction
- Surface Water Flow Direction

Notes:

1) Concentrations shown as ng/L.
2) PFOA or PFOS **red** if >= 10 ng/L.
3) Other PFAS compounds shown if >= 100 ng/L.
4) Predominant groundwater flow direction in the area of this figure is to the southwest.

ng/L = nanograms per liter
Valid qualifiers shown.
ND = Non-detect
J = Estimated; J+ = Estimated, possibly biased high



DATA SOURCES
-Image: ESRI, 2016
-Parsons: Sample Locations, Boundaries

Sampling Date	Sample ID
August 2020	MW26-13, -14, -15, -16 and -17

6:2 Fluorotelomer Sulfonate	6:2 FTS
8:2 Fluorotelomer Sulfonate	8:2 FTS
Perfluorobutanoic acid	PFBA
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
Perfluoropentanoic acid	PFPeA

SENECA ARMY DEPOT ACTIVITY
PFAS EXPANDED SITE INVESTIGATION

FIGURE 6 - SEAD 26 DETAIL
PFAS SOIL SPLP LEACHATE RESULTS

1 inch = 165 feet | November 2020

Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet

PATH: \\MABOS07FS01\Projects\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\PFAS\ESI\ESI_R3b\Maps\PFAS_SEAD26_PadArea_SOILR3Results_111020.mxd

Tables

Table 1 - Groundwater Results
Fire House PFAS ESI
Seneca Army Depot Activity

									Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
									Loc ID	MWFH-01		MWFH-02		MWFH-02		MWFH-03	
									Matrix	GW		GW		GW		GW	
									Sample ID	FHESI20001		FHESI20002		FHESI20004		FHESI20003	
									Sample Depth Interval (FT)	--		--		--		--	
									Sample Date	5/24/2019		5/24/2019		5/24/2019		10/16/2019	
									QC Type	SA		SA		DU		SA	
									Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**		Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																	
6:2 FTS	NG/L	6,200		MWFH-04	7	16				**160**		7.4	J	6.7	J	19	U
8:2 FTS	NG/L	2,100		MWFH-04	4	16				27		9.5	U	9.4	U	9.7	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16				9.4	U	9.5	U	9.4	U	9.7	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	16				4	J	9.5	U	9.4	U	9.7	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	87		MWFH-05	7	16				24		5.1		4.8		0.97	U
Perfluorobutyric acid (PFBA)	NG/L	350		MWFH-04	12	16				75		12		11	J-	27	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	16				1.4	U	1.4	U	1.4	U	1.5	U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	16				0.5	J	0.95	U	0.94	U	0.97	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	16				1.4	U	1.4	U	1.4	U	1.5	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	48	J	MWFH-04	6	16				4.7		0.35	J	0.94	U	0.97	U
Perfluoroheptanoic acid (PFHpA)	NG/L	630		MWFH-04	10	16				99		15		16		1	J
Perfluorohexanesulfonic acid (PFHxS)	NG/L	1,800		MWFH-05	11	16				**300**	**J**	40		37		0.94	J
Perfluorohexanoic acid (PFHxA)	NG/L	980		MWFH-04	10	16				**280**	**J**	35		32		10	
Perfluorononanoic acid (PFNA)	NG/L	150	J	MWFH-04	6	16				7.5		1.4	U	1.4	U	1.5	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	8.3		MWFH-01	1	16				8.3		2.8	U	2.8	U	2.9	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	4,600	J+	MWFH-04	8	16	10	5		220		7.4		6.3		2.9	U
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	15	16	10	7		210	J	23		22		2.3	
Perfluoropentanoic acid (PFPA)	NG/L	1,200		MWFH-04	11	16				**240**		37		37		20	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	16				2.8	U	2.8	U	2.8	U	2.9	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	16				2.8	U	2.8	U	2.8	U	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	16				1.4	U	1.4	U	1.4	U	1.5	U
Total PFAS	NG/L	18,793		MWFH-04	--	--				1,660		182		173		61.2	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J+ = The result is an estimated quantity, but the result may be biased high.

J- = The result is an estimated quantity, but the result may be biased low.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.

- NY State Department of Health MCL (11-2020)

https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 1 - Groundwater Results
Fire House PFAS ESI
Seneca Army Depot Activity

									Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
									Loc ID	MWFH-04		MWFH-04		MWFH-05		MWFH-06	
									Matrix	GW		GW		GW		GW	
									Sample ID	FHESI20005		FHESI20007		FHESI20006		FHESI20008	
									Sample Depth Interval (FT)	--		--		--		--	
									Sample Date	10/16/2019		10/16/2019		10/18/2019		6/29/2020	
									QC Type	SA		DU		SA		SA	
									Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**		Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																	
6:2 FTS	NG/L	6,200		MWFH-04	7	16				**5,000**		**6,200**		**260**	**J**	19	U
8:2 FTS	NG/L	2,100		MWFH-04	4	16				**1,900**	**J**	**2,100**		190	U	9.5	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16				980	U	1,000	U	190	U	9.5	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	16				980	U	1,000	U	190	U	9.5	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	87		MWFH-05	7	16				53	J	**55**	**J**	87		0.95	U
Perfluorobutyric acid (PFBA)	NG/L	350		MWFH-04	12	16				**350**		**340**		**260**		1.4	U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	16				150	U	150	U	29	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	16				98	U	100	U	19	U	0.95	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	16				150	U	150	U	29	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	48	J	MWFH-04	6	16				39	J	**48**	**J**	16	J	0.95	U
Perfluoroheptanoic acid (PFHpA)	NG/L	630		MWFH-04	10	16				**630**		**630**		**510**		1.4	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	1,800		MWFH-05	11	16				**1,200**		**1,200**		**1,800**		1.9	U
Perfluorohexanoic acid (PFHxA)	NG/L	980		MWFH-04	10	16				**920**		**980**		**820**		1.9	U
Perfluorononanoic acid (PFNA)	NG/L	150	J	MWFH-04	6	16				**150**	**J**	**140**	**J**	42		1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	8.3		MWFH-01	1	16				290	U	300	U	58	U	2.8	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	4,600	J+	MWFH-04	8	16	10	5		3,800	J+	4,600	J+	440	J+	2.8	U
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	15	16	10	7		1,300	J+	1,300	J+	4,100	J+	0.66	J
Perfluoropentanoic acid (PFPA)	NG/L	1,200		MWFH-04	11	16				1,200		**1,200**		**860**		1.6	J
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	16				290	U	300	U	58	U	2.8	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	16				290	U	300	U	58	U	2.8	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	16				150	U	150	U	29	U	1.4	U
Total PFAS	NG/L	18,793		MWFH-04	--	--				16,542		18,793		9,195		2.26	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J+ = The result is an estimated quantity, but the result may be biased high.

J- = The result is an estimated quantity, but the result may be biased low.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.

- NY State Department of Health MCL (11-2020)

https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 1 - Groundwater Results
Fire House PFAS ESI
Seneca Army Depot Activity

									Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
									Loc ID	MWFH-07		MWFH-07		MWFH-08		MWFH-09	
									Matrix	GW		GW		GW		GW	
									Sample ID	FHESI20009		FHESI20010		FHESI20011		FHESI20012	
									Sample Depth Interval (FT)	--		--		--		--	
									Sample Date	6/29/2020		6/29/2020		6/29/2020		9/14/2020	
									QC Type	SA		DU		SA		SA	
									Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**		Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																	
6:2 FTS	NG/L	6,200		MWFH-04	7	16				18	U	18	U	19	U	**250**	
8:2 FTS	NG/L	2,100		MWFH-04	4	16				9	U	9	U	9.4	U	86	
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16				9	U	9	U	9.4	U	8.8	UJ
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	16				9	U	9	U	9.4	U	8.8	UJ
Perfluorobutanesulfonic acid (PFBS)	NG/L	87		MWFH-05	7	16				0.9	U	0.9	U	0.94	U	2	
Perfluorobutyric acid (PFBA)	NG/L	350		MWFH-04	12	16				4.8	J	2.9	J	2.6		96	J-
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	16				1.3	U	1.3	U	1.4	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	16				0.9	U	0.9	U	0.94	U	0.52	J
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	16				1.3	U	1.3	U	1.4	U	1.3	UJ
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	48	J	MWFH-04	6	16				0.9	U	0.9	U	0.94	U	1.3	J
Perfluoroheptanoic acid (PFHpA)	NG/L	630		MWFH-04	10	16				1.3	U	1.3	U	1.4	U	23	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	1,800		MWFH-05	11	16				1.8	U	1.8	U	1.9	U	26	
Perfluorohexanoic acid (PFHxA)	NG/L	980		MWFH-04	10	16				0.9	U	0.9	U	0.94	U	90	
Perfluorononanoic acid (PFNA)	NG/L	150	J	MWFH-04	6	16				1.3	U	1.3	U	1.4	U	5.5	
Perfluorooctane Sulfonamide (FOSA)	NG/L	8.3		MWFH-01	1	16				2.7	U	2.7	U	2.8	U	2.6	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	4,600	J+	MWFH-04	8	16	10	5		2.7	U	2.7	U	3.7	U	65	
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	15	16	10	7		0.65	J	0.67	J	0.77	J	41	
Perfluoropentanoic acid (PFPA)	NG/L	1,200		MWFH-04	11	16				0.9	U	0.9	U	0.94	U	**170**	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	16				2.7	UJ	2.7	U	2.8	U	2.6	UJ
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	16				2.7	U	2.7	U	2.8	U	2.6	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	16				1.3	U	1.3	U	1.4	U	1.3	U
Total PFAS	NG/L	18,793		MWFH-04	--	--				5.45		3.57		3.37		856	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J+ = The result is an estimated quantity, but the result may be biased high.

J- = The result is an estimated quantity, but the result may be biased low.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.

- NY State Department of Health MCL (11-2020)

https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 1 - Groundwater Results
Fire House PFAS ESI
Seneca Army Depot Activity

									Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
									Loc ID	MWFH-9D-DN		MWFH-9D-DN		MWFH-10D-DN		MWFH-11	
									Matrix	GW		GW		GW		GW	
									Sample ID	FHESI20014		FHESI20018		FHESI20015		FHESI20017	
									Sample Depth Interval (FT)	57-57		57-57		52-52		--	
									Sample Date	8/24/2020		8/24/2020		9/1/2020		9/14/2020	
									QC Type	SA		DU		SA		SA	
									Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**		Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																	
6:2 FTS	NG/L	6,200		MWFH-04	7	16				17	U	18	U	17	U	18	U
8:2 FTS	NG/L	2,100		MWFH-04	4	16				8.7	U	8.8	U	8.4	U	9.1	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	16				8.7	U	8.8	U	8.4	U	9.1	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	4	J	MWFH-01	1	16				8.7	U	8.8	U	8.4	U	9.1	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	87		MWFH-05	7	16				0.87	U	0.88	U	0.84	U	0.91	U
Perfluorobutyric acid (PFBA)	NG/L	350		MWFH-04	12	16				1.3	U	1.3	U	4		1.4	U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	16				1.3	U	1.3	U	1.3	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	0.52	J	MWFH-09	2	16				0.87	U	0.88	U	0.84	U	0.91	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	16				1.3	U	1.3	U	1.3	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	48	J	MWFH-04	6	16				0.87	U	0.88	U	0.84	U	0.91	U
Perfluoroheptanoic acid (PFHpA)	NG/L	630		MWFH-04	10	16				1.3	U	1.3	U	0.63	J	0.72	J
Perfluorohexanesulfonic acid (PFHxS)	NG/L	1,800		MWFH-05	11	16				0.34	J	0.88	U	3.2		0.4	J
Perfluorohexanoic acid (PFHxA)	NG/L	980		MWFH-04	10	16				0.87	U	0.88	U	4		4.1	
Perfluorononanoic acid (PFNA)	NG/L	150	J	MWFH-04	6	16				1.3	U	1.3	U	0.67	J	1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	8.3		MWFH-01	1	16				2.6	U	2.7	U	2.5	U	2.7	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	4,600	J+	MWFH-04	8	16	10	5		2.6	U	2.7	U	6.6	JN	2.7	U
Perfluorooctanoic acid (PFOA)	NG/L	4,100	J+	MWFH-05	15	16	10	7		0.54	J	0.5	J	1.7		1.8	U
Perfluoropentanoic acid (PFPA)	NG/L	1,200		MWFH-04	11	16				1.7	U	1.8	U	2.6		3.9	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	16				2.6	U	2.7	U	2.5	UJ	2.7	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	16				2.6	U	2.7	U	2.5	U	2.7	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	16				1.3	U	1.3	U	1.3	U	1.4	U
Total PFAS	NG/L	18,793		MWFH-04	--	--				0.88		0.5		23.4		9.12	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J+ = The result is an estimated quantity, but the result may be biased high.

J- = The result is an estimated quantity, but the result may be biased low.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.

- NY State Department of Health MCL (11-2020)

https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 2 - Surface Water Results
Fire House PFAS ESI
Seneca Army Depot Activity

								Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
								Loc ID	SWFH-01		SWFH-02		SWFH-03	
								Matrix	SW		SW		SW	
								Sample ID	FHESI30001		FHESI30002		FHESI30003	
								Sample Date	8/25/2020		8/25/2020		8/27/2020	
								QC Type	SA		SA		SA	
								Study ID	PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)														
6:2 FTS	NG/L	0			0	3			19	U	18	U	18	U
8:2 FTS	NG/L	3.9	J	SWFH-03	1	3			9.6	U	9	U	3.9	J
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	3			9.6	U	9	U	9.1	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	3			9.6	U	9	U	9.1	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	0			0	3			0.96	U	0.9	U	0.91	U
Perfluorobutyric acid (PFBA)	NG/L	9.9	J-	SWFH-03	2	3			1.4	UJ	2.3	J-	9.9	J-
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	3			1.4	U	1.4	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	1.1	J	SWFH-03	2	3			0.96	U	0.72	J	1.1	J
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	3			1.4	U	1.4	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	0			0	3			0.96	U	0.9	U	0.91	U
Perfluoroheptanoic acid (PFHpA)	NG/L	3.7		SWFH-01	3	3			3.7		2.5		1.9	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	5.9		SWFH-01	3	3			5.9		2.7		5.7	
Perfluorohexanoic acid (PFHxA)	NG/L	5.9		SWFH-01	3	3			5.9		2.9		4.2	
Perfluorononanoic acid (PFNA)	NG/L	1.5	J	SWFH-01	3	3			1.5	J	1.4	J	1.4	J
Perfluorooctane Sulfonamide (FOSA)	NG/L	0			0	3			2.9	U	2.7	U	2.7	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	18		SWFH-03	3	3	10	1	9.6		6.6		**18**	
Perfluorooctanoic acid (PFOA)	NG/L	8.4		SWFH-01	3	3	10	0	8.4		3.8		2.4	
Perfluoropentanoic acid (PFPA)	NG/L	5.5		SWFH-02	1	3			9.6	U	5.5		0.91	UJ
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	3			2.9	UJ	2.7	U	2.7	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	3			2.9	U	2.7	U	2.7	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	3			1.4	U	1.4	U	1.4	U
Total PFAS	NG/L	48.5		SWFH-03	--	--			35.0		28.4		48.5	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J- = The result is an estimated quantity, but the result may be biased low.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. **####**
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. **####**
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.

- NY State Department of Health MCL (11-2020)

https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 3 - Soil SPLP Leachate Results
Fire House PFAS ESI
Seneca Army Depot Activity

						Area	FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE		FIRE HOUSE	
						Loc ID	SBFH-01		SBFH-01		SBFH-02		SBFH-02		SBFH-03	
						Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
						Sample ID	FHESI10001		FHESI10004		FHESI10002		FHESI10005		FHESI10003	
						Sample Depth Interval (FT)	2.5-3		2.5-3		2.5-3		0.167-2		2.5-3	
						Sample Date	8/11/2020		8/11/2020		8/11/2020		8/12/2020		8/11/2020	
						QC Type	SA		DU		SA		SA		SA	
						Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																
6:2 FTS	NG/L	0			0	5	18	U	18	U	18	U	19	U	19	U
8:2 FTS	NG/L	0			0	5	9.1	U	9.1	U	9	U	9.5	U	9.6	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	5	9.1	U	9.1	U	9	U	9.5	U	9.6	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	5	9.1	U	9.1	U	9	U	9.5	U	9.6	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	1.2	J	SBFH-03	4	5	0.91	U	0.43	J	0.5	J	0.51	J	1.2	J
Perfluorobutyric acid (PFBA)	NG/L	66		SBFH-01	5	5	66		65		0.83	J	8.6		1.4	J
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	5	1.4	U	1.4	U	1.3	U	1.4	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	0			0	5	0.91	U	0.91	U	0.9	U	0.95	U	0.96	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	5	1.4	U	1.4	U	1.3	U	1.4	U	1.4	U
Perfluoroheptanesulfonic acid (PFHpS)	NG/L	0.69	J	SBFH-02	1	5	0.91	U	0.91	U	0.9	U	0.69	J	0.96	U
Perfluoroheptanoic acid (PFHpA)	NG/L	64		SBFH-01	5	5	62		64		0.66	J	4.6		0.96	J
Perfluorohexanesulfonic acid (PFHxS)	NG/L	45		SBFH-02	5	5	17		18		10		45		11	
Perfluorohexanoic acid (PFHxA)	NG/L	39		SBFH-01	5	5	38		39		1.1	J	14		2.6	
Perfluorononanoic acid (PFNA)	NG/L	10		SBFH-01	3	5	9.3		10		1.3	U	0.51	J	1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	1.2	J	SBFH-02	1	5	2.7	U	2.7	U	2.7	U	1.2	J	2.9	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	13		SBFH-02	5	5	7.7		10		4.9		13		2.5	J
Perfluorooctanoic acid (PFOA)	NG/L	170		SBFH-01	5	5	150		170		1.6	J	10		14	
Perfluoropentanoic acid (PFPA)	NG/L	140		SBFH-01	3	5	140		140		1.8	U	5		1.9	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	5	2.7	U	2.7	U	2.7	UJ	2.8	U	2.9	U
Perfluorotridecanoic acid (PFTriA)	NG/L	0			0	5	2.7	U	2.7	U	2.7	U	2.8	U	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	5	1.4	U	1.4	U	1.3	U	1.4	U	1.4	U

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

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J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

Table 4 - Groundwater Results
SEAD 25 PFAS ESI
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Number of Detects	Number of Analyses	NYS MCL	Number of Exceedances											
Area									SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
Loc ID									MW25-1		MW25-2		MW25-3		MW25-6		MW25-8		MW25-9	
Matrix									GW		GW		GW		GW		GW		GW	
Sample ID									25SI20001		25SI20002		25SI20003		25SI20004		25SI20005		25SI20006	
Sample Depth Interval (FT)									--		--		--		--		--		--	
Sample Date									4/12/2017		4/11/2017		4/11/2017		4/12/2017		4/11/2017		4/11/2017	
QC Type									SA		SA		SA		SA		SA		SA	
Study ID									PFAS SI		PFAS SI		PFAS SI		PFAS SI		PFAS SI		PFAS SI	
Per- and polyfluoroalkyl substances (PFAS)																				
6:2 FTS	NG/L	20	J	MW25-34D	1	23														
8:2 FTS	NG/L	0			0	23														
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37			14	U	15	U	14	U	14	U	14	U	14	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37			14	U	15	U	14	U	14	U	14	U	14	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	1,600		MW25-8	25	37			**380**		**1,500**		**240**		4.3		**1,600**		**670**	
Perfluorobutyric acid (PFBA)	NG/L	660		MW25-31	15	23														
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	23														
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	12	37			2.8		65		37		0.96	U	30		14	
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	37			1.9	U	2	U	0.56	J	1.9	U	1.9	U	1.9	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	5.5	J	MW25-21	3	23														
Perfluoroheptanoic acid (PFHpA)	NG/L	3,200		MW25-2	25	37			**350**		**3,200**		**220**		8.1		**830**		**380**	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	36,000	J	MW25-8	31	37			**5,100**		**17,000**		**5,200**	**J**	88		**36,000**	**J**	**8,900**	
Perfluorohexanoic acid (PFHxA)	NG/L	14,000		MW25-2	27	37			**1,900**		**14,000**		**1,100**		37		**5,900**		**1,600**	
Perfluorononanoic acid (PFNA)	NG/L	140		MW25-8	18	37			14		90		29		0.63	J	**140**		43	
Perfluorooctane Sulfonamide (FOSA)	NG/L	3.1	J	MW25-31D-DN	3	23														
Perfluorooctanesulfonic acid (PFOS)	NG/L	8,300		MW25-8	20	37	10	16	490		3,900		2,300	J	5.8		8,300		1,400	
Perfluorooctanoic acid (PFOA)	NG/L	89,000	J	MW25-2	31	37	10	20	10,000		89,000	J	7,500	J	140		17,000		18,000	
Perfluoropentanoic acid (PFPA)	NG/L	2,200		MW25-31	12	23														
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	37			0.93	U	1	U	0.92	U	0.96	U	0.38	J	0.94	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	37			1.9	U	2	U	2.1	J	1.9	U	1.9	U	1.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	37			1.9	U	1.8	J	5.2		1.9	U	1.9	U	1.9	U
Total PFAS	NG/L	128,757		MW25-2	--	--			18,237		128,757		16,634		284		69,800		31,007	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

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J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.

- NY State Department of Health MCL (11-2020)

https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 4 - Groundwater Results
SEAD 25 PFAS ESI
Seneca Army Depot Activity

									Area	SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
									Loc ID	MW25-10		MW25-10		MW25-13		MW25-15		MW25-15		MW25-17	
									Matrix	GW		GW		GW		GW		GW		GW	
									Sample ID	25SI20007		25SI20014		25SI20008		25SI20009		25SI20013		25SI20010	
									Sample Depth Interval (FT)	--		--		--		--		--		--	
									Sample Date	4/12/2017		4/12/2017		4/12/2017		4/11/2017		4/11/2017		4/12/2017	
									QC Type	SA		DU		SA		SA		DU		SA	
									Study ID	PFAS SI		PFAS SI		PFAS SI		PFAS SI		PFAS SI		PFAS SI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**		Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																							
6:2 FTS	NG/L	20	J	MW25-34D	1	23																	
8:2 FTS	NG/L	0			0	23																	
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37				14	U	13	U	13	U	13	U	14	U	15	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37				14	U	13	U	13	U	13	U	14	U	15	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	1,600		MW25-8	25	37				**210**		**200**		2	J	**360**		**340**		**500**	
Perfluorobutyric acid (PFBA)	NG/L	660		MW25-31	15	23																	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	23																	
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	12	37				0.76	J	0.81	J	0.89	U	4.7		4.4		1.7	J
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	37				1.8	U	1.7	U	1.8	U	1.7	U	1.9	U	2	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	5.5	J	MW25-21	3	23																	
Perfluoroheptanoic acid (PFHpA)	NG/L	3,200		MW25-2	25	37				**100**		**100**		3.9		**260**		**250**		**470**	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	36,000	J	MW25-8	31	37				**2,200**		**2,100**		22		**3,400**		**3,300**		**19,000**	
Perfluorohexanoic acid (PFHxA)	NG/L	14,000		MW25-2	27	37				**710**		**660**		21		**890**		**890**		**1,200**	
Perfluorononanoic acid (PFNA)	NG/L	140		MW25-8	18	37				9.3		9.3		1.8	U	36		35		35	
Perfluorooctane Sulfonamide (FOSA)	NG/L	3.1	J	MW25-31D-DN	3	23																	
Perfluorooctanesulfonic acid (PFOS)	NG/L	8,300		MW25-8	20	37	10	16		250		240		1.4	J	490		480		2,600	
Perfluorooctanoic acid (PFOA)	NG/L	89,000	J	MW25-2	31	37	10	20		2,000		2,100		70		6,800		6,900		11,000	
Perfluoropentanoic acid (PFPA)	NG/L	2,200		MW25-31	12	23																	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	37				0.91	U	0.49	J	0.89	U	0.87	UJ	0.95	UJ	0.98	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	37				1.8	U	1.7	U	1.8	U	1.7	U	1.9	U	2	U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	37				1.8	U	1.7	U	1.8	U	1.7	U	1.9	U	2	U
Total PFAS	NG/L	128,757		MW25-2	--	--				5,481		5,411		120		12,241		12,199		34,807	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J+ = The result is an estimated quantity, but the result may be biased high.

J- = The result is an estimated quantity, but the result may be biased low.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.

- NY State Department of Health MCL (11-2020)

https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 4 - Groundwater Results
SEAD 25 PFAS ESI
Seneca Army Depot Activity

									Area	SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
									Loc ID	MW25-18		MW25-19		MW25-20		MW25-20		MW25-21		MW25-22	
									Matrix	GW		GW		GW		GW		GW		GW	
									Sample ID	25SI20011		25SI20012		25ESI20001		25ESI20007		25ESI20002		25ESI20003	
									Sample Depth Interval (FT)	--		--		--		--		--		--	
									Sample Date	4/12/2017		4/10/2017		5/28/2019		5/28/2019		5/31/2019		5/29/2019	
									QC Type	SA		SA		SA		DU		SA		SA	
									Study ID	PFAS SI		PFAS SI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**		Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																							
6:2 FTS	NG/L	20	J	MW25-34D	1	23								19	U	19	U	19	UJ	19	U
8:2 FTS	NG/L	0			0	23								9.4	U	9.6	U	9.4	UJ	9.3	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37				15	U	15	U	9.4	U	9.6	U	9.4	UJ	9.3	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37				15	U	15	U	9.4	U	9.6	U	9.4	UJ	9.3	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	1,600		MW25-8	25	37				76		**840**		1.8	J	1.8	J	58	J	51	
Perfluorobutyric acid (PFBA)	NG/L	660		MW25-31	15	23								6.3		6.3		58	J	43	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	23								1.4	U	1.4	U	1.4	UJ	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	12	37				0.98	U	13		0.94	U	0.96	U	0.94	UJ	0.93	U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	37				2	U	1.9	U	1.4	U	1.4	U	1.4	UJ	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	5.5	J	MW25-21	3	23								0.94	U	0.96	U	5.5	J	0.92	J
Perfluoroheptanoic acid (PFHpA)	NG/L	3,200		MW25-2	25	37				18		**400**		1.8	J	1.8	J	28	J	32	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	36,000	J	MW25-8	31	37				**920**		**13,000**		8.2		8.4		**310**	**J**	**510**	**J**
Perfluorohexanoic acid (PFHxA)	NG/L	14,000		MW25-2	27	37				**120**		**2,900**		6.4		6.9		**250**	**J**	**280**	**J**
Perfluorononanoic acid (PFNA)	NG/L	140		MW25-8	18	37				2	U	40		1.4	U	1.4	U	0.5	J	0.69	J
Perfluorooctane Sulfonamide (FOSA)	NG/L	3.1	J	MW25-31D-DN	3	23								2.8	U	2.9	U	2.8	UJ	2.8	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	8,300		MW25-8	20	37	10	16		20		2,100		2.8	U	2.9	U	140	J	16	J
Perfluorooctanoic acid (PFOA)	NG/L	89,000	J	MW25-2	31	37	10	20		550		10,000		8.7		7.6		720	J	1,000	J+
Perfluoropentanoic acid (PFPA)	NG/L	2,200		MW25-31	12	23								6.7		6.1		**110**	**J**	89	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	37				0.67	J	0.97	UJ	2.8	U	2.9	U	2.8	UJ	2.8	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	37				2	U	1.9	U	2.8	U	2.9	U	2.8	UJ	2.8	U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	37				2	U	1.9	U	1.4	U	1.4	U	1.4	UJ	1.4	U
Total PFAS	NG/L	128,757		MW25-2	--	--				1,705		29,293		39.9		38.9		1,680		2,023	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J+ = The result is an estimated quantity, but the result may be biased high.

J- = The result is an estimated quantity, but the result may be biased low.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.

- NY State Department of Health MCL (11-2020)

https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 4 - Groundwater Results
SEAD 25 PFAS ESI
Seneca Army Depot Activity

									Area	SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
									Loc ID	MW25-22D		MW25-23		MW25-23		MW25-24		MW25-25		MW25-26	
									Matrix	GW		GW		GW		GW		GW		GW	
									Sample ID	25ESI20015		25ESI20004		25ESI20008		25ESI20005		25ESI20006		25ESI20009	
									Sample Depth Interval (FT)	--		--		--		--		--		--	
									Sample Date	8/19/2020		5/29/2019		5/29/2019		5/30/2019		5/30/2019		10/17/2019	
									QC Type	SA		SA		DU		SA		SA		SA	
									Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**		Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																							
6:2 FTS	NG/L	20	J	MW25-34D	1	23				19	U	19	U	19	UJ	19	U	19	U	19	U
8:2 FTS	NG/L	0			0	23				9.4	U	9.4	U	9.5	UJ	9.6	U	9.4	U	9.6	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37				9.4	U	9.4	U	9.5	UJ	9.6	U	9.4	U	9.6	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37				9.4	U	9.4	U	9.5	UJ	9.6	U	9.4	U	9.6	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	1,600		MW25-8	25	37				0.94	U	0.94	U	0.95	UJ	0.78	J	0.78	J	0.96	U
Perfluorobutyric acid (PFBA)	NG/L	660		MW25-31	15	23				1.4	U	4.4		4.6	J	6.7		4.1		2.3	U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	23				1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	12	37				0.94	U	0.94	U	0.95	UJ	0.96	U	0.94	U	0.96	U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	37				1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	5.5	J	MW25-21	3	23				0.94	U	0.94	U	0.95	UJ	0.96	U	0.94	U	0.96	U
Perfluoroheptanoic acid (PFHpA)	NG/L	3,200		MW25-2	25	37				1.4	U	0.62	J	0.69	J	4.4		1.4	U	1.4	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	36,000	J	MW25-8	31	37				2		0.94	U	0.95	UJ	9.2		3.3		0.96	U
Perfluorohexanoic acid (PFHxA)	NG/L	14,000		MW25-2	27	37				1.9	U	3		2.6	J	7.3		0.54	J	0.96	U
Perfluorononanoic acid (PFNA)	NG/L	140		MW25-8	18	37				1.4	U	1.4	U	1.4	UJ	0.5	J	1.4	U	1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	3.1	J	MW25-31D-DN	3	23				2.8	U	2.8	U	2.9	UJ	2.9	U	2.8	U	2.9	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	8,300		MW25-8	20	37	10	16		2.8	U	2.8	U	2.9	UJ	**11**		2.8	U	2.9	U
Perfluorooctanoic acid (PFOA)	NG/L	89,000	J	MW25-2	31	37	10	20		6.8		3		3.7	J	3.7		0.79	J	1.4	U
Perfluoropentanoic acid (PFPA)	NG/L	2,200		MW25-31	12	23				1.9	U	4.4		4.3	J	9.1		0.94	U	0.96	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	37				2.8	U	2.8	U	2.9	UJ	2.9	U	2.8	U	2.9	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	37				2.8	U	2.8	U	2.9	UJ	2.9	U	2.8	U	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	37				1.4	U	1.4	U	1.4	UJ	1.4	U	1.4	U	1.4	U
Total PFAS	NG/L	128,757		MW25-2	--	--				8.8		15.4		15.9		52.7		9.51		--	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.
[blank] = detect, i.e. detected chemical result value.
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- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
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Table 4 - Groundwater Results
SEAD 25 PFAS ESI
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Number of Detects	Number of Analyses	NYS MCL	Number of Exceedances	Area	SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
									Loc ID	MW25-27		MW25-28		MW25-28		MW25-29		MW25-30		MW25-31	
									Matrix	GW		GW		GW		GW		GW		GW	
									Sample ID	25ESI20010		25ESI20011		25ESI20014		25ESI20012		25ESI20013		25ESI20016	
									Sample Depth Interval (FT)	--		--		--		--		--		--	
									Sample Date	10/16/2019		10/18/2019		10/18/2019		10/17/2019		10/17/2019		8/20/2020	
									QC Type	SA		SA		DU		SA		SA		SA	
									Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
										Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																					
6:2 FTS	NG/L	20	J	MW25-34D	1	23				19	U	20	U	20	U	20	U	19	U	17	U
8:2 FTS	NG/L	0			0	23				9.6	U	9.8	U	10	U	9.8	U	9.7	U	8.7	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37				9.6	U	9.8	U	10	U	9.8	U	9.7	U	8.7	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37				9.6	U	9.8	U	10	U	9.8	U	9.7	U	8.7	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	1,600		MW25-8	25	37				0.96	U	1.2	J	0.97	J	0.98	U	0.97	U	**180**	
Perfluorobutyric acid (PFBA)	NG/L	660		MW25-31	15	23				20		10		9.7		2	U	4.2		**660**	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	23				1.4	U	1.5	U	1.5	U	1.5	U	1.4	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	12	37				0.96	U	0.98	U	1	U	0.98	U	0.97	U	32	J+
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	37				1.4	U	1.5	U	1.5	U	1.5	U	1.4	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	5.5	J	MW25-21	3	23				0.96	U	0.98	U	1	U	0.98	U	0.97	U	3.6	
Perfluoroheptanoic acid (PFHpA)	NG/L	3,200		MW25-2	25	37				1.4	U	4.5		4		1.5	U	1.4	U	**1,100**	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	36,000	J	MW25-8	31	37				0.43	J	12		11		0.37	J	0.48	J	**1,900**	
Perfluorohexanoic acid (PFHxA)	NG/L	14,000		MW25-2	27	37				1.4	J	10		9.6		0.98	U	0.97	U	**6,100**	
Perfluorononanoic acid (PFNA)	NG/L	140		MW25-8	18	37				1.4	U	1.2	J	1.2	J	1.5	U	1.4	U	38	
Perfluorooctane Sulfonamide (FOSA)	NG/L	3.1	J	MW25-31D-DN	3	23				2.9	U	2.9	U	3	U	2.9	U	2.9	U	2.4	J
Perfluorooctanesulfonic acid (PFOS)	NG/L	8,300		MW25-8	20	37	10	16		2.9	U	7.9		8.3		2.9	U	2.9	U	420	
Perfluorooctanoic acid (PFOA)	NG/L	89,000	J	MW25-2	31	37	10	20		0.94	J	**11**		**11**		0.53	J	1.4	U	**65,000**	J
Perfluoropentanoic acid (PFPA)	NG/L	2,200		MW25-31	12	23				1.4	J	11		9.8		0.98	U	1.9	U	**2,200**	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	37				2.9	U	2.9	U	3	U	2.9	U	2.9	U	2.6	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	37				2.9	U	2.9	U	3	U	2.9	U	2.9	U	2.6	U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	37				1.4	U	1.5	U	1.5	U	1.5	U	1.4	U	1.3	U
Total PFAS	NG/L	128,757		MW25-2	--	--				24.2		68.8		65.6		0.90		4.68		77,636	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

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3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.

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Table 4 - Groundwater Results
SEAD 25 PFAS ESI
Seneca Army Depot Activity

								Area	SEAD-25		SEAD-25		SEAD-25		SEAD-25	
								Loc ID	MW25-31D-DN		MW25-31D-DN		MW25-31D-UP		MW25-32	
								Matrix	GW		GW		GW		GW	
								Sample ID	25ESI20018		25ESI20023		25ESI20017		25ESI20019	
								Sample Depth Interval (FT)	71-71		71-71		51-51		--	
								Sample Date	8/20/2020		8/20/2020		8/19/2020		8/19/2020	
								QC Type	SA		DU		SA		SA	
								Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																
6:2 FTS	NG/L	20	J	MW25-34D	1	23			18	U	18	U	18	U	18	U
8:2 FTS	NG/L	0			0	23			9.1	U	9.2	U	8.9	U	9	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37			9.1	U	9.2	U	8.9	U	9	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37			9.1	U	9.2	U	8.9	U	9	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	1,600		MW25-8	25	37			0.91	U	0.92	U	0.89	U	0.77	J
Perfluorobutyric acid (PFBA)	NG/L	660		MW25-31	15	23			1.4	U	1.4	U	1.3	U	6.4	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	23			1.4	U	1.4	U	1.3	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	12	37			0.91	U	0.92	U	0.89	U	0.9	U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	37			1.4	U	1.4	U	1.3	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	5.5	J	MW25-21	3	23			0.91	U	0.92	U	0.89	U	0.9	U
Perfluoroheptanoic acid (PFHpA)	NG/L	3,200		MW25-2	25	37			1.4	U	1.4	U	1.3	U	1.3	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	36,000	J	MW25-8	31	37			0.4	J	0.53	J	1.8	U	3.2	
Perfluorohexanoic acid (PFHxA)	NG/L	14,000		MW25-2	27	37			0.91	U	0.92	U	0.89	U	1.8	U
Perfluorononanoic acid (PFNA)	NG/L	140		MW25-8	18	37			1.4	U	1.4	U	1.3	U	1.3	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	3.1	J	MW25-31D-DN	3	23			3	J	3.1	J	2.7	U	2.7	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	8,300		MW25-8	20	37	10	16	2.7	U	2.8	U	2.7	U	2.7	U
Perfluorooctanoic acid (PFOA)	NG/L	89,000	J	MW25-2	31	37	10	20	1.8	U	1.8	U	1.8	U	1.8	U
Perfluoropentanoic acid (PFPA)	NG/L	2,200		MW25-31	12	23			1.8	U	1.8	U	1.8	U	1.8	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	37			2.7	UJ	2.8	UJ	2.7	U	2.7	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	37			2.7	U	2.8	U	2.7	U	2.7	U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	37			1.4	U	1.4	U	1.3	U	1.3	U
Total PFAS	NG/L	128,757		MW25-2	--	--			3.4		3.63		--		10.37	

								Area	SEAD-25		SEAD-25	
								Loc ID	MW25-32		MW25-33	
								Matrix	GW		GW	
								Sample ID	25ESI20019		25ESI20020	
								Sample Depth Interval (FT)	--		--	
								Sample Date	8/19/2020		8/20/2020	
								QC Type	SA		SA	
								Study ID	PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)												
6:2 FTS	NG/L	20	J	MW25-34D	1	23			18	U	18	U
8:2 FTS	NG/L	0			0	23			9	U	9	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37			9	U	9	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37			9	U	9	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	1,600		MW25-8	25	37			0.77	J	0.61	J
Perfluorobutyric acid (PFBA)	NG/L	660		MW25-31	15	23			6.4		1.3	J
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	23			1.3	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	12	37			0.9	U	0.9	U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	37			1.3	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	5.5	J	MW25-21	3	23			0.9	U	0.9	U
Perfluoroheptanoic acid (PFHpA)	NG/L	3,200		MW25-2	25	37			1.3	U	1.1	J
Perfluorohexanesulfonic acid (PFHxS)	NG/L	36,000	J	MW25-8	31	37			1.8	U	3.2	
Perfluorohexanoic acid (PFHxA)	NG/L	14,000		MW25-2	27	37			0.89	U	1.8	U
Perfluorononanoic acid (PFNA)	NG/L	140		MW25-8	18	37			1.3	U	1.3	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	3.1	J	MW25-31D-DN	3	23			2.7	U	2.7	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	8,300		MW25-8	20	37	10	16	2.7	U	2.7	U
Perfluorooctanoic acid (PFOA)	NG/L	89,000	J	MW25-2	31	37	10	20	1.8	U	**61**	
Perfluoropentanoic acid (PFPA)	NG/L	2,200		MW25-31	12	23			1.8	U	2.4	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	37			2.7	U	2.7	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	37			2.7	U	2.7	U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	37			1.3	U	1.4	U
Total PFAS	NG/L	128,757		MW25-2	--	--			--		75.11	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J+ = The result is an estimated quantity, but the result may be biased high.

J- = The result is an estimated quantity, but the result may be biased low.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.

- NY State Department of Health MCL (11-2020)

https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 4 - Groundwater Results
SEAD 25 PFAS ESI
Seneca Army Depot Activity

									Area	SEAD-25		SEAD-25	
									Loc ID	MW25-34		MW25-34D	
									Matrix	GW		GW	
									Sample ID	25ESI20021		25ESI20022	
									Sample Depth Interval (FT)	--		--	
									Sample Date	8/21/2020		8/31/2020	
									QC Type	SA		SA	
									Study ID	PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**		Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)													
6:2 FTS	NG/L	20	J	MW25-34D	1	23				17	U	20	J
8:2 FTS	NG/L	0			0	23				8.6	U	8.2	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37				8.6	U	8.2	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	37				8.6	U	8.2	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	1,600		MW25-8	25	37				0.86	U	0.82	U
Perfluorobutyric acid (PFBA)	NG/L	660		MW25-31	15	23				1.3	U	1.2	U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	23				1.3	U	1.2	U
Perfluorodecanoic acid (PFDA)	NG/L	65		MW25-2	12	37				0.86	U	0.82	U
Perfluorododecanoic acid (PFDoA)	NG/L	0.56	J	MW25-3	1	37				1.3	U	1.2	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	5.5	J	MW25-21	3	23				0.86	U	0.82	U
Perfluoroheptanoic acid (PFHpA)	NG/L	3,200		MW25-2	25	37				1.3	U	1.2	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	36,000	J	MW25-8	31	37				0.86	U	1.6	U
Perfluorohexanoic acid (PFHxA)	NG/L	14,000		MW25-2	27	37				0.86	U	0.82	U
Perfluorononanoic acid (PFNA)	NG/L	140		MW25-8	18	37				1.3	U	1.2	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	3.1	J	MW25-31D-DN	3	23				2.6	U	2.5	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	8,300		MW25-8	20	37	10	16		2.6	U	3.3	U
Perfluorooctanoic acid (PFOA)	NG/L	89,000	J	MW25-2	31	37	10	20		0.96	J	1.1	J
Perfluoropentanoic acid (PFPA)	NG/L	2,200		MW25-31	12	23				0.86	U	0.82	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0.67	J	MW25-18	3	37				2.6	U	2.5	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	2.1	J	MW25-3	1	37				2.6	U	2.5	U
Perfluoroundecanoic acid (PFUnA)	NG/L	5.2		MW25-3	2	37				1.3	U	1.2	U
Total PFAS	NG/L	128,757		MW25-2	--	--				0.96		21.1	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.
[blank] = detect, i.e. detected chemical result value.
U = non-detect, i.e. not detected at or above this value.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J+ = The result is an estimated quantity, but the result may be biased high.
J- = The result is an estimated quantity, but the result may be biased low.
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.
- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.
- NY State Department of Health MCL (11-2020)
https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 5 - Surface Water Results
SEAD 25 PFAS ESI
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Number of Detects	Number of Analyses	NYS MCL	Number of Exceedances	Area	SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
									Loc ID	25SW-01		25SW-01		25SW-02		25SW-02		25SW-02	
									Matrix	SW		SW		SW		SW		SW	
									Sample ID	25ESI30001		25ESI30004		25ESI30002		25ESI30003		25ESI30005	
									Sample Date	6/3/2019		8/21/2020		6/3/2019		6/3/2019		8/21/2020	
									QC Type	SA		SA		SA		DU		SA	
									Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
										Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																			
6:2 FTS	NG/L	81		25SW-01	3	9				81		19	U	46		46		17	U
8:2 FTS	NG/L	21		25SW-01	3	9				21		9.3	U	17	J	15	J	8.6	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	9				9.4	U	9.3	U	9.9	U	9.5	U	8.6	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	9				9.4	U	9.3	U	9.9	U	9.5	U	8.6	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	640		25SW-05	9	9				4.7		1.1	J	7.1		7.6		2.2	
Perfluorobutyric acid (PFBA)	NG/L	12		25SW-02	9	9				11		5		12		11		9	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	9				1.4	U	1.4	U	1.5	U	1.4	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	0.59	J	25SW-02	2	9				0.5	J	0.93	U	0.99	U	0.95	U	0.59	J
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	9				1.4	U	1.4	U	1.5	U	1.4	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1.7	J	25SW-01	4	9				1.7	J	0.93	U	1.4	J	1.2	J	0.54	J
Perfluoroheptanoic acid (PFHpA)	NG/L	18		25SW-02	9	9				15		3.5		16		18		10	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	130		25SW-02	9	9				38		9.9		**130**		**130**		26	
Perfluorohexanoic acid (PFHxA)	NG/L	43		25SW-02	9	9				27		8.6		41		43		22	
Perfluorononanoic acid (PFNA)	NG/L	4.5		25SW-02	9	9				2.7		0.86	J	3		2.7		4.5	
Perfluorooctane Sulfonamide (FOSA)	NG/L	1.2	J	25SW-01	1	9				2.8	U	1.2	J	3	U	2.8	U	2.6	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	78		25SW-01	9	9	10	9		**78**		**16**		**62**		**53**		**62**	
Perfluorooctanoic acid (PFOA)	NG/L	120		25SW-02	9	9	10	8		**26**		7.2		**110**		**120**		**27**	
Perfluoropentanoic acid (PFPA)	NG/L	30		25SW-02	9	9				27		7.8		30		30		19	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	9				2.8	U	2.8	U	3	U	2.8	U	2.6	UJ
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	9				2.8	U	2.8	U	3	U	2.8	U	2.6	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	9				1.4	U	1.4	U	1.5	U	1.4	U	1.3	U
Total PFAS	NG/L	792		25SW-05	--	--				334		61.2		476		478		183	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.
[blank] = detect, i.e. detected chemical result value.
U = non-detect, i.e. not detected at or above this value.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.
- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.
- NY State Department of Health MCL (11-2020)
https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 5 - Surface Water Results
SEAD 25 PFAS ESI
Seneca Army Depot Activity

								Area	SEAD-25		SEAD-25		SEAD-25		SEAD-25	
								Loc ID	25SW-04		25SW-05		25SW-06		25SW-06	
								Matrix	SW		SW		SW		SW	
								Sample ID	25ESI30007		25ESI30008		25ESI30009		25ESI30010	
								Sample Date	8/24/2020		8/25/2020		8/25/2020		8/25/2020	
								QC Type	SA		SA		SA		DU	
								Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																
6:2 FTS	NG/L	81		25SW-01	3	9			18	U	18	U	17	U	18	U
8:2 FTS	NG/L	21		25SW-01	3	9			8.9	U	8.8	U	8.6	U	8.8	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	9			8.9	U	8.8	U	8.6	U	8.8	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	9			8.9	U	8.8	U	8.6	U	8.8	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	640		25SW-05	9	9			1.8		**640**		2.6		3.2	
Perfluorobutyric acid (PFBA)	NG/L	12		25SW-02	9	9			8.4		7.7		9.1		9.5	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	9			1.3	U	1.3	U	1.3	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	0.59	J	25SW-02	2	9			0.89	U	0.88	U	0.86	U	0.88	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	9			1.3	U	1.3	U	1.3	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	1.7	J	25SW-01	4	9			0.89	U	0.88	U	0.86	U	0.88	U
Perfluoroheptanoic acid (PFHpA)	NG/L	18		25SW-02	9	9			8.7		8.6		10		10	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	130		25SW-02	9	9			23		25		30		32	
Perfluorohexanoic acid (PFHxA)	NG/L	43		25SW-02	9	9			17		19		23		23	
Perfluorononanoic acid (PFNA)	NG/L	4.5		25SW-02	9	9			2.5		3.6		3.9		4.1	
Perfluorooctane Sulfonamide (FOSA)	NG/L	1.2	J	25SW-01	1	9			2.7	U	2.6	U	2.6	U	2.6	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	78		25SW-01	9	9	10	9	**27**		**51**		**34**		**34**	
Perfluorooctanoic acid (PFOA)	NG/L	120		25SW-02	9	9	10	8	**20**		**22**		**29**		**29**	
Perfluoropentanoic acid (PFPA)	NG/L	30		25SW-02	9	9			14		15		18		18	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	9			2.7	UJ	2.6	UJ	2.6	U	2.6	UJ
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	9			2.7	U	2.6	U	2.6	U	2.6	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	9			1.3	U	1.3	U	1.3	U	1.3	U
Total PFAS	NG/L	792		25SW-05	--	--			122		792		160		163	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.
[blank] = detect, i.e. detected chemical result value.
U = non-detect, i.e. not detected at or above this value.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.
- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.
- NY State Department of Health MCL (11-2020)
https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 6 - Soil SPLP Leachate Results
SEAD 25 PFAS ESI
Seneca Army Depot Activity

						Area	SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25		SEAD-25	
						Loc ID	SB25-17		SB25-18		SB25-18		SB25-18		SB25-19		SB25-19	
						Matrix	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
						Sample ID	25ESI10001		25ESI10005		25ESI10006		25ESI10002		25ESI10004		25ESI10003	
						Sample Depth Interval (FT)	2.5-3		0.167-2		0.167-2		2.5-3		0.167-1.917		2.5-3	
						Sample Date	8/12/2020		8/12/2020		8/12/2020		8/12/2020		8/12/2020		8/12/2020	
						QC Type	SA		SA		DU		SA		SA		SA	
						Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**	**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**		Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																		
6:2 FTS	NG/L	0		0	6		19	U	19	U	19	U	19	U	19	U	20	U
8:2 FTS	NG/L	0		0	6		9.7	U	9.7	U	9.3	U	9.4	U	9.7	U	9.8	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	6		9.7	U	9.7	U	9.3	U	9.4	U	9.7	U	9.8	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	6		9.7	U	9.7	U	9.3	U	9.4	U	9.7	U	9.8	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	13	SB25-18	6	6		12		11		13		5.7		5.9		11	
Perfluorobutyric acid (PFBA)	NG/L	26	SB25-18	6	6		15		25		26		5.8		1.9		9.6	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	6		1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.5	U
Perfluorodecanoic acid (PFDA)	NG/L	62	SB25-18	6	6		17		19		22		62		1	J	2.5	
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	6		1.5	U	1.4	U	1.4	U	1.4	U	1.5	U	1.5	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	28	SB25-18	6	6		6.7		26		28		18		3.7		7.8	
Perfluoroheptanoic acid (PFHpA)	NG/L	21	SB25-19	6	6		5.8		9.5		11		5.7		4.6		21	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	680	SB25-18	6	6		250		580		680		480		330		620	
Perfluorohexanoic acid (PFHxA)	NG/L	150	SB25-19	6	6		34		80		88		41		26		150	
Perfluorononanoic acid (PFNA)	NG/L	8.6	SB25-18	6	6		7		6.8		8.6		8.4		1.8	J	6.7	
Perfluorooctane Sulfonamide (FOSA)	NG/L	170	SB25-18	6	6		7.1		170		160		17		2.2	J	18	
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,400	SB25-18	6	6		920		1,800		2,000		2,400		120		270	
Perfluorooctanoic acid (PFOA)	NG/L	1,100	SB25-19	6	6		450		460		580		420		340		1,100	
Perfluoropentanoic acid (PFPA)	NG/L	37	SB25-18	6	6		26		36		37		11		4.5		21	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	6		2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	6		2.9	U	2.9	U	2.8	U	2.8	U	2.9	U	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0.71	J SB25-18	1	6		1.5	U	1.4	U	1.4	U	0.71	J	1.5	U	1.5	U

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

Table 7 - Groundwater Results
SEAD 26 PFAS ESI
Seneca Army Depot Activity

							Area	SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26	
							Loc ID	MW26-12		MW26-13		MW26-14		MW26-15		MW26-16	
							Matrix	GW		GW		GW		GW		GW	
							Sample ID	26ESI20001		26ESI20002		26ESI20003		26ESI20004		26ESI20005	
							Sample Depth Interval (FT)	--		--		--		--		--	
							Sample Date	5/31/2019		5/30/2019		5/31/2019		5/31/2019		5/31/2019	
							QC Type	SA		SA		SA		SA		SA	
							Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**	**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																	
6:2 FTS	NG/L	420	MW26-28	7	28			19	U	8.8	J	19	U	19	UJ	29	J
8:2 FTS	NG/L	600	MW26-28	2	28			9.5	U	9.6	U	9.5	U	9.4	UJ	9.5	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			9.5	U	9.6	U	9.5	U	9.4	UJ	9.5	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			9.5	U	9.6	U	9.5	U	9.4	UJ	9.5	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	52	MW26-28	16	28			0.95	U	1	J	3		0.94	UJ	48	
Perfluorobutyric acid (PFBA)	NG/L	260	MW26-28	22	28			1.4	U	63		18		1.4	UJ	**220**	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	28			1.4	U	1.4	U	1.4	U	1.4	UJ	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	2	28			0.95	U	0.96	U	0.95	U	0.94	UJ	0.95	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	28			1.4	U	1.4	U	1.4	U	1.4	UJ	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	36	MW26-28	7	28			0.95	U	0.96	U	0.95	U	0.94	UJ	14	
Perfluoroheptanoic acid (PFHpA)	NG/L	580	MW26-28	17	28			1.4	U	21		5.5		1.4	UJ	**360**	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	910	MW26-28	16	28			0.95	U	11		12		0.94	UJ	**610**	
Perfluorohexanoic acid (PFHxA)	NG/L	880	MW26-28	18	28			0.48	J	69		26		0.94	UJ	**650**	
Perfluorononanoic acid (PFNA)	NG/L	50	MW26-28	6	28			1.4	U	1.4	U	1.4	U	1.4	UJ	37	
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28	3	28			2.9	U	2.9	U	2.9	U	2.8	UJ	2.8	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,300	MW26-28	11	28	10	6	2.9	U	2.9	U	6.2		2.8	UJ	770	
Perfluorooctanoic acid (PFOA)	NG/L	540	MW26-28	19	28	10	10	0.52	J	7.9		4.5		0.54	J	330	J+
Perfluoropentanoic acid (PFPA)	NG/L	920	MW26-28	20	28			0.64	J	**120**		20		0.94	UJ	**720**	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	28			2.9	U	2.9	U	2.9	U	2.8	UJ	2.8	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	28			2.9	U	2.9	U	2.9	U	2.8	UJ	2.8	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	28			1.4	U	1.4	U	1.4	U	1.4	UJ	1.4	U
Total PFAS	NG/L	7,539	MW26-28	--	--			1.64		302		95.2		0.54		3,788	

							Area	SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26	
							Loc ID	MW26-16		MW26-17		MW26-18		MW26-19		MW26-20	
							Matrix	GW		GW		GW		GW		GW	
							Sample ID	26ESI20007		26ESI20006		26ESI20008		26ESI20009		26ESI20010	
							Sample Depth Interval (FT)	--		--		--		--		--	
							Sample Date	5/31/2019		5/31/2019		5/31/2019		5/31/2019		5/31/2019	
							QC Type	DU		SA		SA		SA		SA	
							Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**	**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																	
6:2 FTS	NG/L	420	MW26-28	7	28			35	J	19	U	19	U	19	U	19	U
8:2 FTS	NG/L	600	MW26-28	2	28			9.5	UJ	9.5	U	9.5	U	9.5	U	9.5	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			9.5	UJ	9.5	U	9.5	U	9.5	U	9.5	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			9.5	UJ	9.5	U	9.5	U	9.5	U	9.5	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	52	MW26-28	16	28			46	J	0.95	U	0.95	U	0.95	U	0.95	U
Perfluorobutyric acid (PFBA)	NG/L	260	MW26-28	22	28			210	J	1.4	U	1.4	U	1.4	U	1.4	U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	28			1.4	UJ	1.4	U	1.4	U	1.4	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	2	28			0.95	UJ	0.95	U	0.95	U	0.95	U	0.95	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	28			1.4	UJ	1.4	U	1.4	U	1.4	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	36	MW26-28	7	28			12	J	0.95	U	0.95	U	0.95	U	0.95	U
Perfluoroheptanoic acid (PFHpA)	NG/L	580	MW26-28	17	28			340	J	1.4	U	1.4	U	1.4	U	1.4	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	910	MW26-28	16	28			610	J	0.95	U	0.95	U	0.95	U	0.95	U
Perfluorohexanoic acid (PFHxA)	NG/L	880	MW26-28	18	28			660	J	0.48	J	0.95	U	0.95	U	0.95	U
Perfluorononanoic acid (PFNA)	NG/L	50	MW26-28	6	28			38	J	1.4	U	1.4	U	1.4	U	1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28	3	28			2.8	UJ	2.9	U	2.9	U	2.9	U	2.9	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,300	MW26-28	11	28	10	6	800	J	2.9	U	2.9	U	2.9	U	2.9	U
Perfluorooctanoic acid (PFOA)	NG/L	540	MW26-28	19	28	10	10	330	J+	0.52	J	0.54	J	0.54	J	0.54	J
Perfluoropentanoic acid (PFPA)	NG/L	920	MW26-28	20	28			720	J	0.64	J	0.94	UJ	0.94	UJ	0.94	UJ
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	28			2.8	UJ	2.9	U	2.9	U	2.9	U	2.9	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	28			2.8	UJ	2.9	U	2.9	U	2.9	U	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	28			1.4	UJ	1.4	U	1.4	U	1.4	U	1.4	U
Total PFAS	NG/L	7,539	MW26-28	--	--			3,801		1.64		0.54		0.54		0.54	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.
[blank] = detect, i.e. detected chemical result value.
U = non-detect, i.e. not detected at or above this value.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.
J+ = The result is an estimated quantity, but the result may be biased high.
JN = Tentatively identified compound, estimated concentration.
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.
- NY State Department of Health MCL (11-2020)
https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 7 - Groundwater Results
SEAD 26 PFAS ESI
Seneca Army Depot Activity

							Area	SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26	
							Loc ID	MW26-17		MW26-18		MW26-19		MW26-20		MW26-20		MW26-21	
							Matrix	GW		GW		GW		GW		GW		GW	
							Sample ID	26ESI20006		26ESI20008		26ESI20013		26ESI20010		26ESI20012		26ESI20014	
							Sample Depth Interval (FT)	--		--		--		--		--		--	
							Sample Date	5/31/2019		10/17/2019		8/21/2020		10/18/2019		10/18/2019		6/29/2020	
							QC Type	SA		SA		SA		SA		DU		SA	
							Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**	**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																			
6:2 FTS	NG/L	420	MW26-28	7	28			19	U	12	J	19	U	19	U	20	U	18	U
8:2 FTS	NG/L	600	MW26-28	2	28			9.5	U	9.8	U	9.3	U	9.7	U	9.9	U	8.9	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			9.5	U	9.8	U	9.3	U	9.7	U	9.9	U	8.9	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			9.5	U	9.8	U	9.3	UJ	9.7	U	9.9	U	8.9	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	52	MW26-28	16	28			0.56	J	3.8		0.93	U	23		24		0.41	J
Perfluorobutyric acid (PFBA)	NG/L	260	MW26-28	22	28			33		54		6		**160**		**160**		5	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	28			1.4	U	1.5	U	1.4	U	1.5	U	1.5	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	2	28			0.95	U	0.98	U	0.93	U	0.97	U	0.99	U	0.89	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	28			1.4	U	1.5	U	1.4	U	1.5	U	1.5	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	36	MW26-28	7	28			0.95	U	0.98	U	0.93	U	0.47	J	0.59	J	0.89	U
Perfluoroheptanoic acid (PFHpA)	NG/L	580	MW26-28	17	28			15		28		1.6	J	74		77		1.3	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	910	MW26-28	16	28			0.95	U	20		0.91	J	**120**		**120**		1.8	U
Perfluorohexanoic acid (PFHxA)	NG/L	880	MW26-28	18	28			83		69		4.6		**240**		**250**		1.8	U
Perfluorononanoic acid (PFNA)	NG/L	50	MW26-28	6	28			1.4	U	0.61	J	1.4	U	1.5	U	1.5	U	1.3	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28	3	28			2.8	U	2.9	U	1.5	J	2.9	U	3	U	2.7	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,300	MW26-28	11	28	10	6	2.8	U	**11**		2.8	U	9.5	J	**10**	J	2.7	U
Perfluorooctanoic acid (PFOA)	NG/L	540	MW26-28	19	28	10	10	3.7		**18**		4.5		**24**		**25**		1.3	U
Perfluoropentanoic acid (PFPA)	NG/L	920	MW26-28	20	28			**130**		**130**		7.1		**340**		**350**		1.4	J
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	28			2.8	U	2.9	U	2.8	U	2.9	U	3	U	2.7	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	28			2.8	U	2.9	U	2.8	U	2.9	U	3	U	2.7	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	28			1.4	U	1.5	U	1.4	U	1.5	U	1.5	U	1.3	U
Total PFAS	NG/L	7,539	MW26-28	--	--			265		346		26.2		991		1,017		6.81	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.
[blank] = detect, i.e. detected chemical result value.
U = non-detect, i.e. not detected at or above this value.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.
J+ = The result is an estimated quantity, but the result may be biased high.
JN = Tentatively identified compound, estimated concentration.
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.
- NY State Department of Health MCL (11-2020)
https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 7 - Groundwater Results
SEAD 26 PFAS ESI
Seneca Army Depot Activity

							Area	SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26	
							Loc ID	MW26-22		MW26-23		MW26-23D		MW26-24		MW26-25		MW26-26	
							Matrix	GW		GW		GW		GW		GW		GW	
							Sample ID	26ESI20015		26ESI20016		26ESI20017		26ESI20018		26ESI20019		26ESI20020	
							Sample Depth Interval (FT)	--		--		--		--		--		--	
							Sample Date	6/29/2020		8/31/2020		8/31/2020		9/1/2020		9/1/2020		8/14/2020	
							QC Type	SA		SA		SA		SA		SA		SA	
							Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**	**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																			
6:2 FTS	NG/L	420	MW26-28	7	28			18	U	18	U	16	U	18	U	16	U	18	U
8:2 FTS	NG/L	600	MW26-28	2	28			9	U	9	U	8.2	U	9.1	U	8.1	U	9.1	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			9	U	9	U	8.2	U	9.1	U	8.1	U	9.1	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			9	U	9	U	8.2	U	9.1	U	8.1	U	9.1	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	52	MW26-28	16	28			0.9	U	12		0.82	U	0.91	U	0.81	U	0.91	U
Perfluorobutyric acid (PFBA)	NG/L	260	MW26-28	22	28			1.8	U	51		4.3		1.4	U	1.2	J	32	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	28			1.4	U	1.3	U	1.2	U	1.4	U	1.2	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	2	28			0.9	U	0.9	U	0.82	U	0.91	U	0.81	U	0.91	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	28			1.4	U	1.3	U	1.2	U	1.4	U	1.2	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	36	MW26-28	7	28			0.9	U	0.9	U	0.82	U	0.91	U	0.81	U	0.91	U
Perfluoroheptanoic acid (PFHpA)	NG/L	580	MW26-28	17	28			1.4	U	19		1.2	U	1.4	U	1.2	U	3.6	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	910	MW26-28	16	28			0.9	U	28		0.82	U	0.91	U	0.38	J	0.91	U
Perfluorohexanoic acid (PFHxA)	NG/L	880	MW26-28	18	28			0.9	U	86		1.6	U	0.91	U	0.81	U	16	
Perfluorononanoic acid (PFNA)	NG/L	50	MW26-28	6	28			1.4	U	1.3	U	1.2	U	1.4	U	1.2	U	1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28	3	28			2.7	U	2.7	U	2.5	U	2.7	U	2.4	U	2.7	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,300	MW26-28	11	28	10	6	2.7	U	3.6	U	2.5	U	2.7	U	2.4	U	2.7	U
Perfluorooctanoic acid (PFOA)	NG/L	540	MW26-28	19	28	10	10	1.4	U	**11**		1.2	U	1.4	U	1.2	U	1	J
Perfluoropentanoic acid (PFPA)	NG/L	920	MW26-28	20	28			0.9	U	**110**		3.6		0.91	U	1.6	U	61	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	28			2.7	UJ	2.7	U	2.5	U	2.7	U	2.4	U	2.7	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	28			2.7	U	2.7	U	2.5	U	2.7	U	2.4	U	2.7	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	28			1.4	U	1.3	U	1.2	U	1.4	U	1.2	U	1.4	U
Total PFAS	NG/L	7,539	MW26-28	--	--			--		317		7.9		--		1.58		114	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.
[blank] = detect, i.e. detected chemical result value.
U = non-detect, i.e. not detected at or above this value.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.
J+ = The result is an estimated quantity, but the result may be biased high.
JN = Tentatively identified compound, estimated concentration.
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.
- NY State Department of Health MCL (11-2020)
https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 7 - Groundwater Results
SEAD 26 PFAS ESI
Seneca Army Depot Activity

							Area	SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26	
							Loc ID	MW26-27		MW26-28		MW26-28		MW26-28D-DN		MW26-28D-UP		MW26-29	
							Matrix	GW		GW		GW		GW		GW		GW	
							Sample ID	26ESI20021		26ESI20022		26ESI20030		26ESI20024		26ESI20023		26ESI20025	
							Sample Depth Interval (FT)	--		--		--		87.5-87.5		62.5-62.5		--	
							Sample Date	8/21/2020		8/17/2020		8/17/2020		8/18/2020		8/18/2020		8/14/2020	
							QC Type	SA		SA		DU		SA		SA		SA	
							Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**	**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																			
6:2 FTS	NG/L	420	MW26-28	7	28			19	U	**400**		**420**		18	UJ	18	U	19	U
8:2 FTS	NG/L	600	MW26-28	2	28			9.5	U	**600**		**570**		9.1	UJ	9.1	U	9.4	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			9.5	U	8.9	U	9.1	U	9.1	UJ	9.1	U	9.4	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			9.5	U	8.9	U	9.1	U	9.1	UJ	9.1	U	9.4	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	52	MW26-28	16	28			0.52	J	52		50		0.91	UJ	0.91	U	1.3	J
Perfluorobutyric acid (PFBA)	NG/L	260	MW26-28	22	28			53		**260**		**260**		1.3	J	1.1	J	19	
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	28			1.4	U	1.3	U	1.4	U	1.4	UJ	1.4	U	1.4	U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	2	28			0.95	U	7		7.5		0.91	UJ	0.91	U	0.94	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	28			1.4	U	1.3	U	1.4	U	1.4	UJ	1.4	U	1.4	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	36	MW26-28	7	28			0.95	U	35		36		0.91	UJ	0.91	U	0.94	U
Perfluoroheptanoic acid (PFHpA)	NG/L	580	MW26-28	17	28			1.2	J	**580**		**560**		1.4	UJ	1.4	U	17	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	910	MW26-28	16	28			0.61	J	**900**		**910**		1.8	UJ	1.8	U	5	
Perfluorohexanoic acid (PFHxA)	NG/L	880	MW26-28	18	28			15		**880**		**850**		0.91	UJ	0.91	U	51	
Perfluorononanoic acid (PFNA)	NG/L	50	MW26-28	6	28			1.4	U	50		48		1.4	UJ	1.4	U	1.4	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28	3	28			2.9	U	15		15		2.7	UJ	2.7	U	2.8	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,300	MW26-28	11	28	10	6	1.7	J	2,300		2,300		2.7	UJ	2.7	U	2.8	U
Perfluorooctanoic acid (PFOA)	NG/L	540	MW26-28	19	28	10	10	2.7		540		530		1.4	UJ	1.4	U	8.2	
Perfluoropentanoic acid (PFPA)	NG/L	920	MW26-28	20	28			58		**920**		**900**		1.8	UJ	1.8	U	56	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	28			2.9	U	2.7	U	2.7	U	2.7	UJ	2.7	U	2.8	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	28			2.9	U	2.7	U	2.7	U	2.7	UJ	2.7	U	2.8	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	28			1.4	U	1.3	U	1.4	U	1.4	UJ	1.4	U	1.4	U
Total PFAS	NG/L	7,539	MW26-28	--	--			133		7,539		7,457		1.3		1.1		158	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.
[blank] = detect, i.e. detected chemical result value.
U = non-detect, i.e. not detected at or above this value.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.
J+ = The result is an estimated quantity, but the result may be biased high.
JN = Tentatively identified compound, estimated concentration.
J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold red color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.
- NY State Department of Health MCL (11-2020)
https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 7 - Groundwater Results
SEAD 26 PFAS ESI
Seneca Army Depot Activity

							Area	SEAD-26		SEAD-26		SEAD-26		SEAD-26	
							Loc ID	MW26-30		MW26-31		MW26-32D-DN		MW26-32D-UP	
							Matrix	GW		GW		GW		GW	
							Sample ID	26ESI20026		26ESI20027		26ESI20029		26ESI20028	
							Sample Depth Interval (FT)	--		--		69-69		49-49	
							Sample Date	8/18/2020		8/18/2020		8/19/2020		8/18/2020	
							QC Type	SA		SA		SA		SA	
							Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
Parameter	**Unit**	**Max Detected Value**	**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	**NYS MCL**	**Number of Exceedances**	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)															
6:2 FTS	NG/L	420	MW26-28	7	28			18	U	9.2	J	18	U	18	U
8:2 FTS	NG/L	600	MW26-28	2	28			8.8	U	9.3	U	9	U	8.8	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			8.8	U	9.3	U	9	U	8.8	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0		0	28			8.8	U	9.3	U	9	U	8.8	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	52	MW26-28	16	28			18		5.8		0.9	U	0.88	U
Perfluorobutyric acid (PFBA)	NG/L	260	MW26-28	22	28			86		61		1.3	U	1.3	U
Perfluorodecanesulfonic acid (PFDS)	NG/L	0		0	28			1.3	U	1.4	U	1.3	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	7.5	MW26-28	2	28			0.88	U	0.93	U	0.9	U	0.88	U
Perfluorododecanoic acid (PFDoA)	NG/L	0		0	28			1.3	U	1.4	U	1.3	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	36	MW26-28	7	28			0.47	JN	0.93	U	0.9	U	0.88	U
Perfluoroheptanoic acid (PFHpA)	NG/L	580	MW26-28	17	28			65		47		1.3	U	1.3	U
Perfluorohexanesulfonic acid (PFHxS)	NG/L	910	MW26-28	16	28			**190**		52		0.9	U	0.88	U
Perfluorohexanoic acid (PFHxA)	NG/L	880	MW26-28	18	28			**190**		**120**		0.9	U	0.88	U
Perfluorononanoic acid (PFNA)	NG/L	50	MW26-28	6	28			0.5	J	1.4	U	1.3	U	1.3	U
Perfluorooctane Sulfonamide (FOSA)	NG/L	15	MW26-28	3	28			2.7	U	2.8	U	2.7	U	2.6	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	2,300	MW26-28	11	28	10	6	9.7		7.3		2.7	U	2.6	U
Perfluorooctanoic acid (PFOA)	NG/L	540	MW26-28	19	28	10	10	**37**		**41**		1.3	U	1.3	U
Perfluoropentanoic acid (PFPA)	NG/L	920	MW26-28	20	28			**160**		**120**		0.9	U	1.8	U
Perfluorotetradecanoic acid (PFTeA)	NG/L	0		0	28			2.7	U	2.8	U	2.7	U	2.6	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0		0	28			2.7	U	2.8	U	2.7	U	2.6	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0		0	28			1.3	U	1.4	U	1.3	U	1.3	U
Total PFAS	NG/L	7,539	MW26-28	--	--			757		463		--		--	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.
[blank] = detect, i.e. detected chemical result value.
U = non-detect, i.e. not detected at or above this value.
UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.
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3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.
- NY State Department of Health MCL (11-2020)
https://regs.health.ny.gov/sites/default/files/proposed-regulations/Maximum%20Contaminant%20Levels%20%28MCLs%29.pdf

Table 8 - Surface Water Results
SEAD 26 PFAS ESI
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value		Max Detected Loc ID	Number of Detects	Number of Analyses	NYS MCL	Number of Exceedances	Area	SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26	
									Loc ID	SW26-03		SW26-04		SW26-04		SW26-05		SW26-06	
									Matrix	SW		SW		SW		SW		SW	
									Sample ID	26ESI30003		26ESI30004		26ESI30005		26ESI30006		26ESI30007	
									Sample Date	8/21/2020		8/25/2020		8/25/2020		8/28/2020		8/28/2020	
									QC Type	SA		SA		DU		SA		SA	
									Study ID	PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI		PFAS ESI	
										Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																			
6:2 FTS	NG/L	0			0	5				18	U	18	U	17	U	19	U	18	U
8:2 FTS	NG/L	0			0	5				8.9	U	8.9	U	8.7	U	9.4	U	9	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	5				8.9	U	8.9	U	8.7	U	9.4	U	9	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	5				8.9	U	8.9	U	8.7	U	9.4	U	9	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	1.5	J	SW26-05	5	5				0.47	J	0.96	J	1.3	J	1.5	J	1.4	J
Perfluorobutyric acid (PFBA)	NG/L	13		SW26-05	5	5				3.5		6.6		6.8		13		12	J-
Perfluorodecanesulfonic acid (PFDS)	NG/L	0			0	5				1.3	U	1.3	U	1.3	U	1.4	U	1.3	U
Perfluorodecanoic acid (PFDA)	NG/L	0			0	5				0.89	U	0.89	U	0.87	U	0.94	U	0.9	U
Perfluorododecanoic acid (PFDoA)	NG/L	0			0	5				1.3	U	1.3	U	1.3	U	1.4	U	1.3	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	0			0	5				0.89	U	0.89	U	0.87	U	0.94	U	0.9	U
Perfluoroheptanoic acid (PFHpA)	NG/L	3.5		SW26-05	4	5				1.3	U	2.1		2.4		3.5		3.4	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	5.2		SW26-04	5	5				1.6	J	4.6		5.2		3.8		4.2	
Perfluorohexanoic acid (PFHxA)	NG/L	6.4		SW26-06	4	5				1.8	U	3.6		4.3		6.3		6.4	
Perfluorononanoic acid (PFNA)	NG/L	0.6	J	SW26-06	3	5				1.3	U	1.3	U	0.52	JN	0.56	J	0.6	J
Perfluorooctane Sulfonamide (FOSA)	NG/L	0			0	5				2.7	U	2.7	U	2.6	U	2.8	U	2.7	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	5.8		SW26-06	5	5	10	0		3.3	J	2.7	J	4.6		4.8		5.8	
Perfluorooctanoic acid (PFOA)	NG/L	3.2		SW26-05	5	5	10	0		0.93	J	2.2		2.5		3.2		2.7	
Perfluoropentanoic acid (PFPA)	NG/L	7.5		SW26-05	4	5				1.8	U	4		4.4		7.5		7.2	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	5				2.7	U	2.7	UJ	2.6	UJ	2.8	UJ	2.7	UJ
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	5				2.7	U	2.7	U	2.6	U	2.8	U	2.7	U
Perfluoroundecanoic acid (PFUnA)	NG/L	0			0	5				1.3	U	1.3	U	1.3	U	1.4	U	1.3	U
Total PFAS	NG/L									9.8		26.8		32.0		44.2		43.7	

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

UJ=The compound was not detected: however, the results is estimated because of discrepancies in meeting certain analyte-specific QC criteria.

J- = The result is an estimated quantity, but the result may be biased low.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

3) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the criteria that are present.

- Results in bold **red** color represent values that are above the NYS MCL for PFOA or PFOS [10 ng/L]. ####
- **Bold** values represent results that are at or above DEC guidance for individual PFAS [100 ng/L]. ####
- Shaded values represent results that are at or above DEC guidance for total PFAS [500 ng/L]. ###

4) Criteria action level source document and web address as of 01 December 2020.

- NY State Department of Health MCL (11-2020)

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Table 9 - Soil SPLP Leachate Results
SEAD 26 PFAS ESI
Seneca Army Depot Activity

						Area	SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26		SEAD-26	
						Loc ID	SB26-13		SB26-14		SB26-14		SB26-15		SB26-16		SB26-16	
						Matrix	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
						Sample ID	26ESI10001		26ESI10007		26ESI10002		26ESI10003		26ESI10006		26ESI10004	
						Sample Depth Interval (FT)	2.5-3		0-2.5		2.5-3		2.5-3		0-2.167		2.5-3	
						Sample Date	8/13/2020		8/13/2020		8/13/2020		8/13/2020		8/13/2020		8/13/2020	
						QC Type	SA		SA		SA		SA		SA		SA	
Parameter	**Unit**	**Max Detected Value**		**Max Detected Loc ID**	**Number of Detects**	**Number of Analyses**	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Per- and polyfluoroalkyl substances (PFAS)																		
6:2 FTS	NG/L	290		SB26-14	2	7	18	U	270	J+	290		19	U	20	U	19	U
8:2 FTS	NG/L	330	J+	SB26-14	1	7	9.1	U	330	J+	9.6	U	9.6	U	9.8	U	9.7	U
N-ethyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	7	9.1	U	9	U	9.6	U	9.6	U	9.8	U	9.7	U
N-methyl perfluorooctane sulfonamidoacetic acid	NG/L	0			0	7	9.1	U	9	U	9.6	U	9.6	U	9.8	U	9.7	U
Perfluorobutanesulfonic acid (PFBS)	NG/L	19		SB26-14	4	7	0.91	U	17		19		1.4	J	0.98	U	0.97	U
Perfluorobutyric acid (PFBA)	NG/L	53		SB26-16	7	7	8.3		40		42		20		53		17	
Perfluorodecanesulfonic acid (PFDS)	NG/L	2.3		SB26-14	1	7	1.4	U	2.3		1.4	U	1.4	U	1.5	U	1.5	U
Perfluorodecanoic acid (PFDA)	NG/L	54		SB26-14	2	7	0.91	U	54		0.96	U	0.94	J	0.98	U	0.97	U
Perfluorododecanoic acid (PFDoA)	NG/L	0.83	J	SB26-14	1	7	1.4	U	0.83	J	1.4	U	1.4	U	1.5	U	1.5	U
Perfluoroheptanesulfonic Acid (PFHpS)	NG/L	25		SB26-14	4	7	0.91	U	23		25		4.1		0.98	U	0.97	U
Perfluoroheptanoic acid (PFHpA)	NG/L	210		SB26-14	7	7	8.5		210		91		27		21		16	
Perfluorohexanesulfonic acid (PFHxS)	NG/L	290		SB26-14	7	7	0.43	J	290		280		49		12		3.2	
Perfluorohexanoic acid (PFHxA)	NG/L	170		SB26-14	7	7	30		170		150		21		21		11	
Perfluorononanoic acid (PFNA)	NG/L	39		SB26-14	5	7	1.4	U	39		1.4	U	33		16		2	
Perfluorooctane Sulfonamide (FOSA)	NG/L	4		SB26-14	2	7	2.7	U	4		2.9	U	1.2	J	2.9	U	2.9	U
Perfluorooctanesulfonic acid (PFOS)	NG/L	1,500		SB26-14	7	7	2.2	J	1,500		250		470		15		1.9	J
Perfluorooctanoic acid (PFOA)	NG/L	280		SB26-14	7	7	0.8	J	200		280		39		29		18	
Perfluoropentanoic acid (PFPA)	NG/L	150		SB26-14	7	7	28		150		140		44		84		39	
Perfluorotetradecanoic acid (PFTeA)	NG/L	0			0	7	2.7	U	2.7	U	2.9	U	2.9	U	2.9	U	2.9	U
Perfluorotridecanoic Acid (PFTriA)	NG/L	0			0	7	2.7	U	2.7	U	2.9	U	2.9	U	2.9	U	2.9	U
Perfluoroundecanoic acid (PFUnA)	NG/L	8.1		SB26-14	1	7	1.4	U	8.1		1.4	U	1.4	U	1.5	U	1.5	U

Footnotes:

1) Number of analyses is the number of detected and non-detected results. Sample duplicate pairs have not been averaged.

2) Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during data validation.

[blank] = detect, i.e. detected chemical result value.

U = non-detect, i.e. not detected at or above this value.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

J+ = The result is an estimated quantity, but the result may be biased high.

Army's Response to Comments from the New York State Department of Environmental Conservation

Subject: Technical Memorandum for the PFAS ESI Data Summary (12/03/20)

Seneca Army Depot

NYSDEC Site No. 850006

Romulus, New York

Comments Dated: 04 December 2020

Date of Comment Response: 11 January 2021

NYSDEC COMMENTS

Comment 1: General: In my initial review of this data, I note that only SPLP leachate results are presented. Were any soil samples analyzed for the PFAS suite prior to SPLP extraction? The March 20, 2020 Army's Response to NYSDEC Comments on the PFAS ESI Phase 2 draft Tech Memo indicate (Fire House Comment 5, SEAD 25 Comment 10, and SEAD 26 Comment 14) that the Army would be analyzing soil samples for the PFAS suite and the SPLP leachate for PFAS.

> **Army Response to Comment 1:** It is correct that the Army agreed to sample soil for PFAS and SPLP leachate. Soil samples for analysis of PFAS were collected and submitted to the lab. The lab missed the request and only analyzed the leachate from the samples using the SPLP.
>
> The SPLP concentrations suggest a significant contribution of PFAS from site soils, and these data support the conclusion that site soils are impacted and should be further investigated during the RI for PFAS. Additional delineation of PFAS in the soil could be conducted in the RI to determine its toxicity, extent and potential properties for disposal or treatment.

Comment 2: NYSDEC and NYSDOH would recommend a repeat of surface water sampling at those locations sampled in the vicinity of the firehouse and SEAD-25 in Spring 2021.

> **Army Response to Comment 2:** Agree, the Army plans to collect surface water samples from the previous locations.

END OF COMMENTS

APPENDIX L Response to Comments

Army's Response to Comments from the Environmental Protection Agency

Subject: 2021 Draft Final PFAS Expanded Site Investigation (ESI) Report for the Fire House, SEAD 25, and SEAD 26

Seneca Army Depot

NYSDEC Site No. 850006

Romulus, New York

Comments Dated: 17 November 2021

Date of Comment Response: 04 January 2022

EPA COMMENTS

Comment 1: We concur with the NYSDEC comment recommending further investigation of the borrow material source locations which supplied clean fill to the areas under investigation within this report.

> **Army Response to Comment 1:** No additional information was found on the exact location of the on-site borrow source. The source, and presence, of the filled areas will be investigated further during the RI.

Comment 2: Additional soil sampling in the SEAD 25 and SEAD 26 fill areas is recommended.

> **Army Response to Comment 2:** Additional soil sampling will be conducted during the RI.

Comment 3: The source of elevated PFAS concentrations in SW26-02 should be further investigated. Soil sampling within SEAD 64A is recommended as a part of future investigations.

> **Army Response to Comment 3:** The source is suspected to be runoff from the SEAD-26 pad area. The SEAD-26 surface water PFAS sources will be investigated further during the RI. Potential sources at SEAD-64A will be investigated as part of an upcoming PFAS SI. Soil sampling will be conducted within this area as part of the SI and RI work.

Comment 4: Is there a possibility that irrigation wells in support of farming operations could be installed within areas potentially affected by PFAS from the areas being investigated?

> **Army Response to Comment 4:** No known irrigation wells exist within the Depot at this time. Nonetheless, potential receptors exposed to groundwater will be considered in the RI risk assessment.

Comment 5: Section 3.1.2 states that well MW26-19 may have missed the westerly expression of contamination associated with the Former Drum Storage Area at SEAD 26. Agreed. Future work should also consider and investigate the possibility of southerly/easterly components to groundwater flow in the area south of the Former Drum Storage Area.

> **Army Response to Comment 5:** The RI work plan will include wells proposed west of the former drum storage area.

Comment 6: Section 3.2: Is it possible that the distinct PFAS signatures observed in the Fire House area are a result of differences in post-release processes (e.g., transformation of precursors, differences in sorption behavior) between this area and SEAD25/26? Are there differences in the suspected timing of PFAS releases to the environment between the areas?

> **Army Response to Comment 6:** Several factors may contribute to differences in the PFAS signatures observed between the sites. 1) Different AFFF formulations may have been used. It is unknown what brand of AFFF was used, if the same type was used at all three sites or if the brand changed over time; 2) although the native material (glacial till) underneath all the sites is similar, SEAD-25 and SEAD-26 had areas that were excavated and filled. Some of the fill material was sourced from near the Fire House and may have contained PFAS and some of the fill was sourced from an off-site quarry. The addition of unknown sources and reworking of the soil in the source area may have contributed to differences in the post-release processes. This will be further evaluated in the RI.

Comment 7: Are the proportions of PFAS present in the soil in the suspected source areas consistent with the groundwater results discussed in Section 3.2? Additional discussion of this within the report would be useful.

> **Army Response to Comment 7:** The soil sampling conducted as part of the ESI was limited. Additional soil sampling will be conducted during the RI and analysis of proportions of PFAS in the soil and groundwater will be conducted in the RI.

Comment 8: Southwest of the firehouse, PFAS concentrations in surface water were higher in SWFH-03 than in SWFH-01 and SWFH-02. Is there the potential for groundwater discharge to surface water downgradient of the firehouse?

> **Army Response to Comment 8:** The infrastructure in this area is old so there is the potential for groundwater infiltration into the stormwater lines. This will be further evaluated in the RI.

Comment 9: We suggest future sampling at SEAD-39, a former leach pit area, in order to characterize the potential for PFAS contamination in this area.

> **Army Response to Comment 9:** A PFAS historical records review is being conducted at Seneca to review former areas that may have site histories which may have resulted in PFAS-releases. At this time, the former use of SEAD-39 was disposal of boiler blowdown onto the ground and beginning in 1976 into the sanitary sewer. Blowdown occurs when water is removed from a steam boiler while the boiler is operating. Boilers are "blown down" to remove suspended solids and bottom sludge from steam boilers. No evidence was found to suggest the water and solids inside the boiler may contain PFAS.

Comment 10: Section 3.4 suggests that future investigations target additional delineation of the PFAS impacts to soil at the fire house. We concur with this recommendation, and specifically recommend sampling soils at the nearby apartment complexes. Based on the results of this delineation it may be necessary to evaluate potential human exposure pathways.

> **Army Response to Comment 10:** Additional soil delineation will be conducted during the RI. A risk assessment will be a component of the RI.

Comment 11: The final conclusion in Section 4.0 states that there are potential environmental exposure pathways downgradient of SEAD 25 and SEAD 26. Based upon the data and data gaps identified in the earlier sections of the report, there exists a potential for a human ingestion pathway as well.

Army Response to Comment 11: A human health and ecological risk assessment will be a component of the upcoming PFAS RI.

HUMAN HEALTH RISK COMMENTS

GENERAL COMMENTS:

Comment 1: EPA has released the final versions of SW-846 3512 (preparation method) and 8327 (determinate method) for analysis of PFAS in groundwater, surface water, and wastewater effluent. It has been validated for 24 Per- and Polyfluoroalkyl Substances (PFAS). Please consider these methods for future sampling and analysis of PFAS (links are provided below).

- SW-846 Update VII Announcements: https://www.epa.gov/hw-sw846/sw-846-update-viiannouncements#PhaseII8327
- Method 3512: https://www.epa.gov/hw-sw846/sw-846-test-method-3512-solvent-dilution-nonpotable-waters
- Method 8327: https://www.epa.gov/hw-sw846/sw-846-test-method-8327-and-polyfluoroalkylsubstances-pfas-liquid-chromatographytandem

Army Response to Comment 1: At this time, the Army requires that Draft EPA Method 1633 be used for all matrices other than drinking water. The Army understands that methods are constantly in development and that other options, including the EPA method, may be approved by the time we start field work for the RI. The method selected may change based on accepted recommendations at the time, and any proposed changes will be communicated and coordinated with EPA and NYSDEC for review.

SPECIFIC COMMENTS:

Comment 1: In order to better summarize section 3.3 (Receptor Survey) and section 3.4 (Data Gaps) and also characterize potential ingestion pathway for humans (e.g., livestock and hunting in SEAD 25 and SEAD 26) as well as ecological receptors and impacts, a table/figure of a conceptual site model (CSM) should be included. The CSM should provide a comprehensive characterization of all known and potential PFAS sources, PFAS analytes, fate and transport, media, exposure pathways and receptors. It would be best to identify all known and potentially contaminated media and relevant exposure pathways in the CSM so that exposures that can be quantitatively or qualitatively assessed are documented and used for potential future risk assessment.

Army Response to Comment 1: An updated CSM will be provided during the RI.

Comment 2: For Section 1.4 on pg. 6 (Screening Level), please refer to the recent NYSDEC guidance values and update this section accordingly. There are proposed guidance values for PFOA and PFOS for human health (which are lower than the adopted maximum contaminant levels of 10 ppt or ng/L) and aquatic life. Please also indicate whether EPA regional screening levels (RSLs) were considered and since they were not used as project action limit, please provide an explanation. There are currently site-specific RSLs for PFOS, PFOA, and PFBS. For example, in cases where there are multiple PFAS, the screening level for PFOS and PFOA individually in tap water is 40 parts per trillion (ppt) and for PFBS it is 600 ppt. Since PFOA and PFOS were also measured in the soil (Section 3.1.1, pg. 10), please indicate whether RSLs of PFOA and PFOS specific for soil should be considered.

Army Response to Comment 2: The Army understands that PFAS screening levels are constantly being refined by NYSDEC, EPA, and other agencies. The PALs will be defined in the UFP-QAPP for the PFAS RI, with the intent to identify the latest and most appropriate values.

ECOLOGICAL RISK COMMENTS

Comment 1: In general, this document should acknowledge the potential for ecological risk from PFAS compounds.

Army Response to Comment 1: A ecological risk assessment will be a component of the RI.

Comment 2: Section 1.4, p. 14: Ecological screening values (ESVs) should be considered. A joint DoD/EPA work group has just released ESVs for site-specific use. EPA Region 2 will forward the announcement email and attachments separately to the Army. In addition, NYSDEC just released new ecological values for PFOS in surface water that should be included in this document. All of these ESVs should be used in the RI as appropriate.

Army Response to Comment 2: The latest ESVs were received from EPA. Both NYSDEC and the DOD/EPA ESVs will be reviewed and included in the RI, as appropriate.

Comment 3: Section 3.3, p. 22: Please include a description of what ecological receptors would be at each SEAD and the potential exposure pathways, similar to what was done for human exposure.

Army Response to Comment 3: Additional information regarding human and ecological receptors will be detailed in the upcoming RI with human health and ecological risk assessments.

Comment 4: Section 3.4, p. 23: The text states that the data gaps are bulleted for "potential future investigations." Please clarify whether these components will actually be investigated. As sediment will potentially be investigated, porewater concentrations should also be measured.

Army Response to Comment 4: The RI will include investigation of all the data gaps. The RI Work Plan will propose locations for collection of sediment and porewater.

Army's Response to Comments from the New York State Department of Environmental Conservation

Subject: 2021 Draft Final PFAS Expanded Site Investigation (ESI) Report for the Fire House, SEAD 25, and SEAD 26

Seneca Army Depot

NYSDEC Site No. 850006

Romulus, New York

Comments Dated: 17 November 2021

Date of Comment Response: 04 January 2022

NYSDEC COMMENTS

Comment 1: The borrow source for the SEAD-25 fill is indicated in the Completion Report for the SEAD as soil that was excavated along East Patrol Road, between 2nd Street and South Street, along Quarters Drive, and a segment of 1st Avenue and 3rd Avenue. Given that SEAD-25 was excavated to bedrock and impacts to the groundwater are observed in the overburden the source of this fill may also have been impacted with PFAS and should be investigated further.

> **Army Response to Comment 1:** No additional information was found on the exact location of the on-site borrow source. The source, and presence, of the filled areas will be investigated further during the RI.

Comment 2: The State recommends that PFAS sampling be conducted at the western boundary of the former Seneca Army Depot in both groundwater and surface water.

> **Army Response to Comment 2:** An SI will be conducted at multiple sites at Seneca, including sites closer to the western boundary of SEDA. Media proposed for the SI sites are groundwater, soil, sediment, and surface water.

Comment 3: The State recommends that fish/invertebrate sampling be conducted in Indian and Kendaia Creeks.

> **Army Response to Comment 3:** The upcoming RI is scoped to include biological sampling (deer and fish).

Comment 4: The State recommends the investigation proceed to the Remedial Investigation phase.

> **Army Response to Comment 4:** The ESI sites are contracted to progress to the RI stage. A separate RI Work Plan will be submitted in 2022.